## PC6172
17" industrial Core 2 Duo Panel PC

User Manual

PC6172: 17" Core 2 Duo touch Panel PC
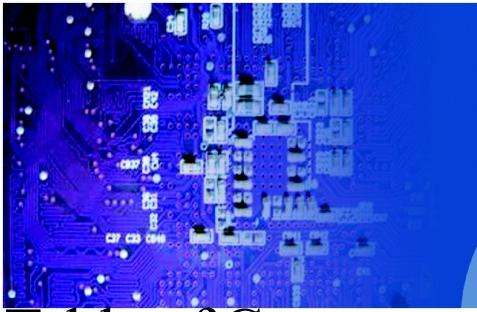
PC6172
17" industrial Core 2 Duo Panel PC

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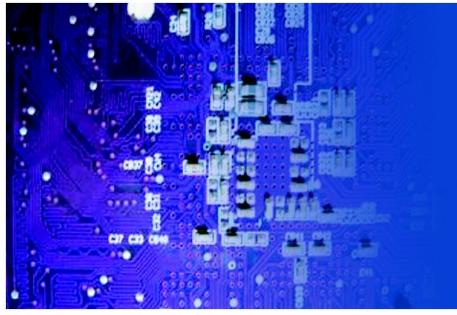
CHAPTER 4 Driver Installation

CHAPTER 1 INTRODUCTION

1-1   General Description

Thank you for purchasing our PC6152 Intel Core 2 Duo/ Core Solo Main board enhanced with VGA/ Sound/LAN, which is fully PC/ AT compatible. The PC6152 provides faster processing speed, greater expandability and can handle more tasks than before. This manual is designed to assist you how to install and set up the system. It contains four chapters. The user can apply this manual for configuration according to the following chapters:

-Chapter 1 Introduction

This chapter introduces you to the background of this manual, and the specifications for this system. The final page of this chapter will indicate how to avoid damaging this board.

-Chapter 2 Hardware Configuration

This chapter outlines the component locations and their functions. In the end of this chapter, you will learn how to set jumper and how to configure this card to meet your own needs.

-Chapter 3 Software Utilities

This chapter contains helpful information for proper installations of the VGA utility, LAN utility, Sound utility, and Flash BIOS Update. It also describes the Watchdog-timer configuration.

-Chapter 4 Award BIOS Setup

This chapter indicates you how to set up the BIOS configurations.

-Appendix A Expansion Bus

This Appendix introduces you the expansion bus for PCI-E x16 BUS.

-Appendix B Technical Summary

This section gives you the information about the Technical maps.
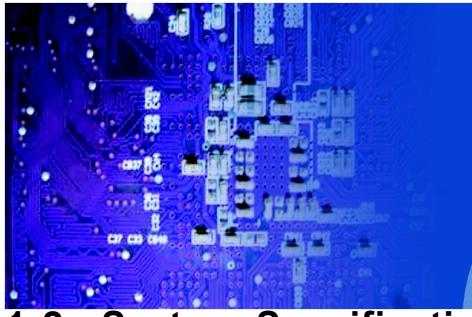
1-2 System Specifications

- CPU: Intel® Core 2 Duo/ Core Solo/ Celeron® M Socket 478 onboard for 65nm CPU. (Up to 2.16GHz)

- CHIPSET: Intel® 945GME + ICH7R (FSB: 533/667MHz)

- MEMORY : 2 x 200-pin DDR2 SO-DIMM. Support DDR II 667 SDRAM up to 4GB.

- CACHE : Built-in CPU.

- REAL-TIME CLOCK : 256-byte battery backed CMOS RAM. Hardware implementation to indicate century rollover.

- BIOS : Phoenix-AwardBIOS™ for plug & play function. 8MB with VGA BIOS. Easy update 512KB flash EEPROM. Support S/IO Setup.

- KEYBOARD CONNECTOR : Mini DIN connector. Supports for AT/PS2 keyboard.

- MOUSE CONNECTOR : Mini DIN connector. Supports for PS/2 Mouse.

- BUS SUPPORT : 1 PCI-E (x16) Slot (SDVO), CF (only available if no IDE device attached)

- DISPLAY : Built-in Intel 945GME, support for CRT, LVDS, TV-Out. Onboard 15-pin VGA D-SUB connector, support for resolution on QXGA Monitor.

- IDE INTERFACE : One IDE ports support up to two IDE devices. Supports Ultra DMA 33.

- SERIAL ATA PORT : Two S-ATA connectors from ICH7R.

Warning: SATA ports with 5V on board (pin7). Please don't use normal SATA device.

- USB CONNECTOR : Support up to eight USB 2.0 ports.

- LAN ADAPTER : LAN: Intel® 82573V (10/100/1000 Mbps) Support wake-on-LAN function.

- SERIAL PORT : Two high speed 16550 Compatible UARTs with Send / Receive 16 Byte. FIFOs; COM1/2:RS-232. MIDI Compatible. Programmable Baud Rate Generator

- SOUND : Realtek ALC655 (AC'97 Codec).

Fully Compliant AC'97 Analog I/O Component

16-Bit Stereo Full-Duplex Codec.
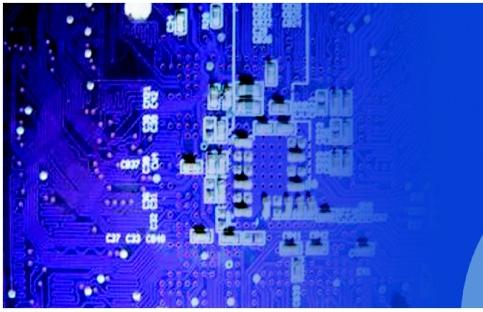
Four Analog Line-level Stereo Inputs for Connection.

High Quality CD Input with Ground Sense. Stereo Line-Level Output

Interface: Line-In, Line-Out, Microphone.

- HARDWARE MONITORING FUNCTION : Monitor Voltage, CPU temperature, & Cooling fan speed.

If CPU Temperature is over setting, the buzzer will send out a warming (only under DOS system).

- IRDA PORT : 5-pin Infrared port, support IrDA v1.0 SIR protocol

- GREEN FUNCTION : Controlled by hardware and software.

- LED INDICATOR : System power Hard Disk access LAN LED indicator

- DMA CONTROLLER : 8237 x 2

- DMA CHANNELS : 7

- INTERRUPT CONTROLLERS : 82C59 x 2

- INTERRUPT LEVELS : 15

- OPERATING TEMPERATURE : 0 to 60°C.

- BOARD DIMENSIONS : 170 mm x 170 mm, 6.69" x 6.69"

- BOARD NET WEIGHT : 810 gram.

1-3 Safety Precautions

Follow the messages below to avoid your systems from damage:

1. Keep your system away from static electricity on all occasions.

2. Prevent electric shock. Don't touch any components of this card when the card is power-on. Always disconnect power when the system is not in use.

3. Disconnect power when you change any hardware devices. For instance, when you connect a jumper or install any cards, a surge of power may damage the electronic components or the whole system.
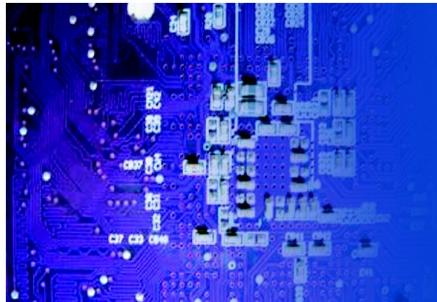
CHAPTER 2 HARDWARE INSTALLATION

2-1   Component Locations
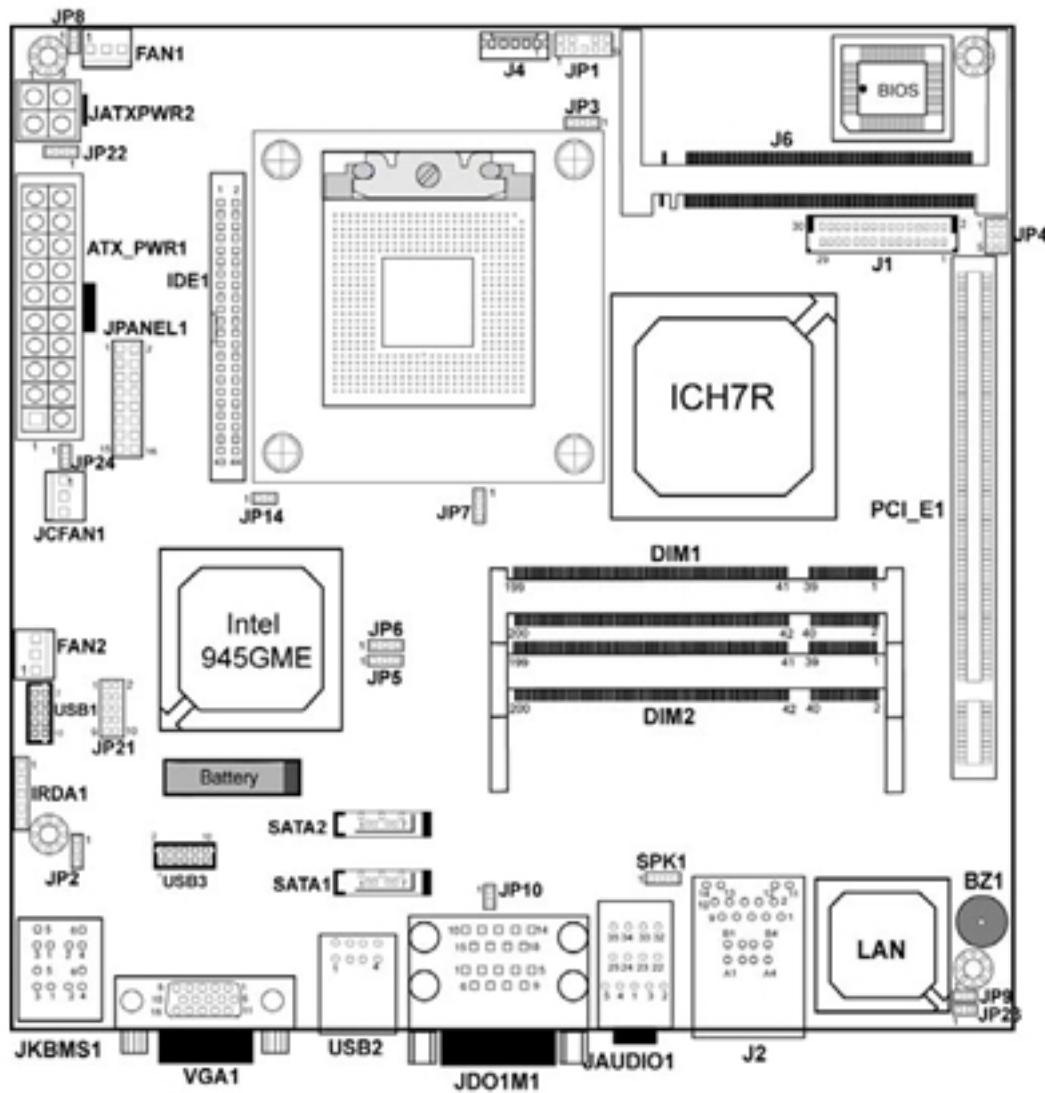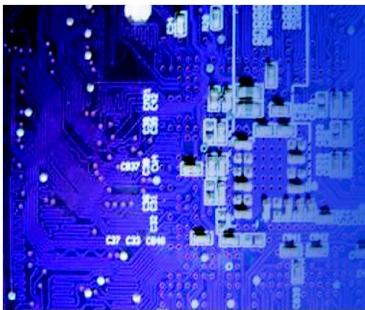
2-2 How to Set The Jumpers

You can configure your board by setting jumpers. Jumper is consists of two or three metal pins with a plastic base mounted on the card, and by using a small plastic "cap", Also known as the jumper cap (with a metal contact inside), you are able to connect the pins.So you can set-up your hardware configuration by "open" or "close" pins.

The jumper can be combined into sets that called jumper blocks. When the jumpers are all in the block, you have to put them together to set up the hardware configuration. The figure below shows how this looks like.

JUMPERS AND CAPS

| 2 Pin Jumper | 3 Pin Jumper | Jumper Block | Jumper Cap |
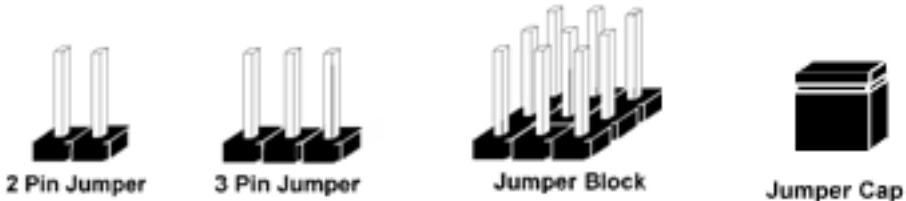
If a jumper has three pins (for examples, labeled PIN1, PIN2, and PIN3), You can connect PIN1 & PIN2 to create one setting by shorting. You can either connect PIN2 & PIN3 to create another setting. The same jumper diagrams are applied all through this manual. The figure below shows what the manual diagrams look and what they represent.

JUMPER DIAGRAMS

Jumper Cap
looks like this

2 pin Jumper
looks like this
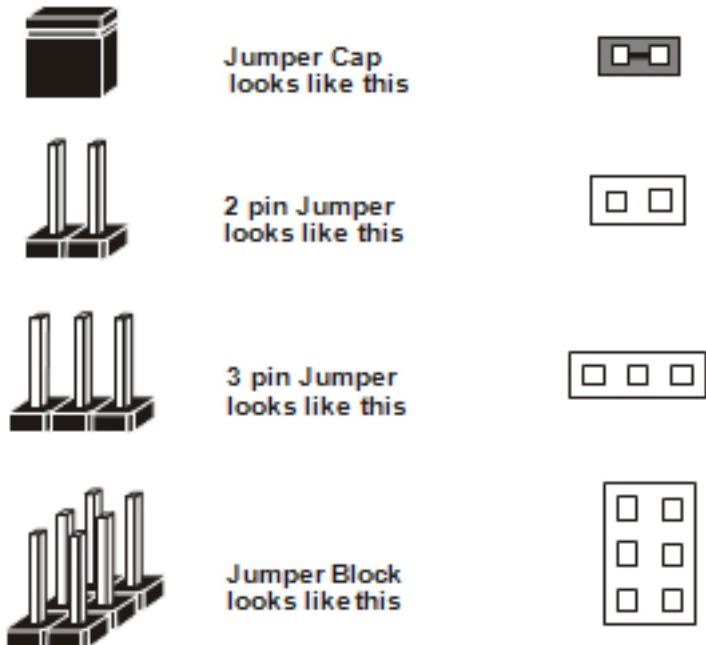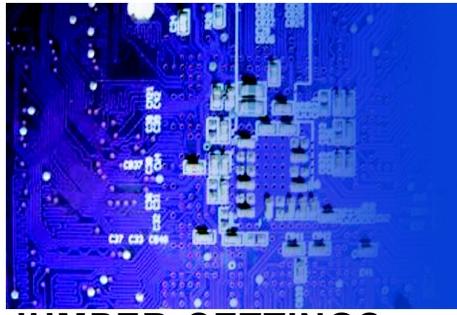
3 pin Jumper
looks like this

Jumper Block
looks like this

JUMPER SETTINGS

2 pin Jumper close (enabled)
Looks like this
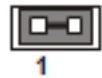
3 pin Jumper
2-3 pin close (enabled)
Looks like this
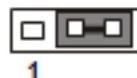
Jumper Block
1-2 pin close (enabled)
Looks like this
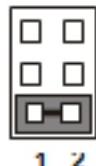
2-3 COM port connector

COM1 : COM1 Connector

COM1 is fixed as RS-232.

The pin assignment is as follows :

PIN	ASSIGNMENT
1	DCD1
2	RX1
3	TX1
4	DTR1
5	GND
6	DSR1
7	RTS1
8	CTS1
9	RI1

COM2

COM1
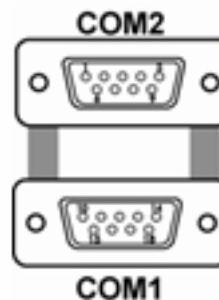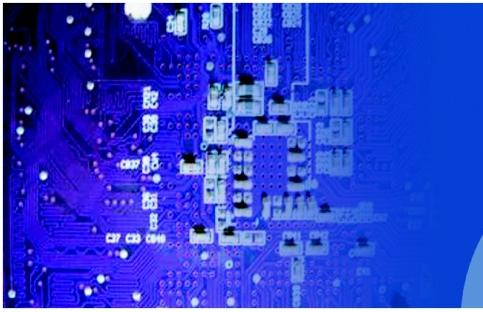
COM2 : COM2 Connector

The COM2 is selectable as RS-232/422/485.

The pin assignment is as follows :

PIN	ASSIGNMENT
1	DCD2
2	RX2
3	TX2
4	DTR2
5	GND
6	DSR2
7	RTS2
8	CTS2
9	RI2

2-4 PS/2 Keyboard and Mouse Connector

JKBMS1 : PS/2 Keyboard and Mouse Connector

The pin assignments are as follows :

PIN	ASSIGNMENT
1	KBDATA
2	NC
3	GND
4	5VSB
5	KBCLK
6	NC
7	MSDATA
8	NC
9	GND
10	5VSB
11	MSCLK
12	NC
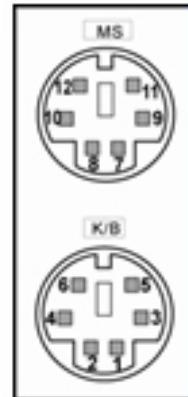
JKBMS1
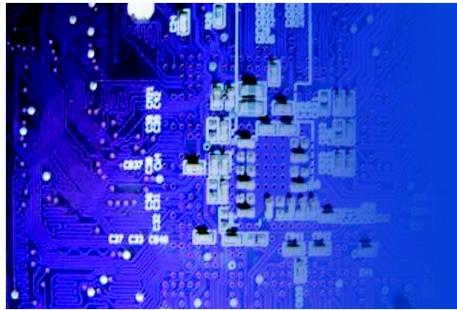
2-5 Reset Connector

JPANEL1 (13, 15) : Reset Connector. The pin assignment is as follows :

PIN	ASSIGNMENT
13	GND
15	RST_BTN
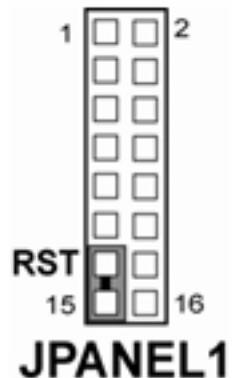
2-6 Hard Disk Drive LED Connector

JPANEL1 (9, 11) : Hard Disk Drive LED Connector

The pin assignment is as follows :

PIN	ASSIGNMENT
9	HD_LED+
11	HD_LED-
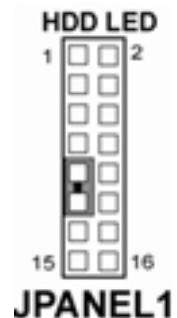
2-7 ATX Power Button

JPANEL1 (14, 16) : ATX Power Button

The pin assignment is as follows :

PIN	ASSIGNMENT
14	PW_BN1
16	PW_BN2
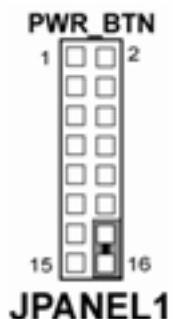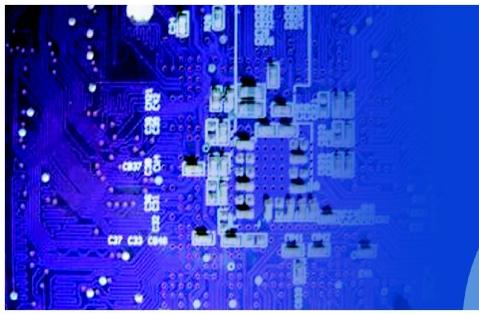
2-8 External Speaker Connector

JPANEL1 (1, 3, 5, 7) : External Speaker Connector

The pin assignment is as follows :

PIN	ASSIGNMENT
1	P_SPK
3	NC
5	NC
7	VCC
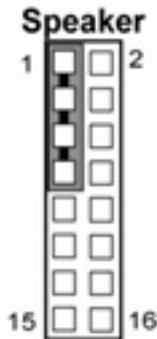
2-9 Power LED Connector

JPANEL1 (8, 10, 12) : Power LED Connector

The pin assignment is as follows:

PIN	ASSIGNMENT
8	PW_LED+
10	PW_LED+
12	PW_LED-
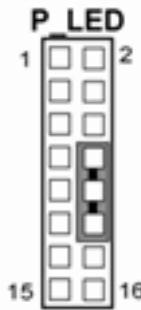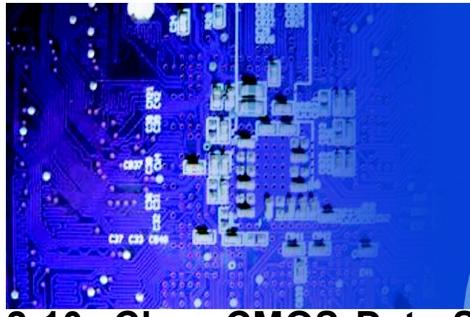
2-10   Clear CMOS Data Selection

JP2 : Clear CMOS Data Selection

The selections are as follows :

FUNCTION	JUMPER SETTING (pin closed)	JUMPER ILLUSTRATION
Keep CMOS	1-2	
Clear CMOS	2-3	

*** Manufacturing Default - Keep CMOS.

Note: To clear CMOS data, user must power-off the computer and set the jumper to "Clear CMOS" as illustrated above. After five to six seconds, set the jumper back to "Normal" and power-on the computer.

2-11   CPU Fan Connector

FAN1 : CPU Fan connector

The pin assignment is as follows:

PIN	ASSIGNMENT
1	LPC1_FANPWM1
2	+12V
3	LPC1_FANIO1
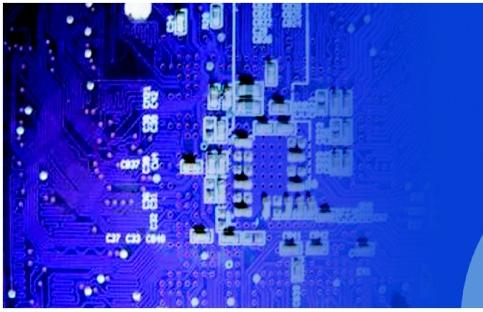
2-12 System Fan Connector

FAN2: System Fan connector

The pin assignment is as follows:

PIN	ASSIGNMENT
1	LPC1_FANPWM2
2	+12V
3	LPC1_FANIO2

FAN2

JCFAN1: System Fan connector

The pin assignment is as follows:

PIN	ASSIGNMENT
1	GND
2	+12V
3	NC

JCFAN1

2-13 Hard Disk Drive Connector

The PLP-P615 possesses one HDD connector: IDE1.

IDE1: Hard Disk Drive Connector

The pin assignments are as follows:
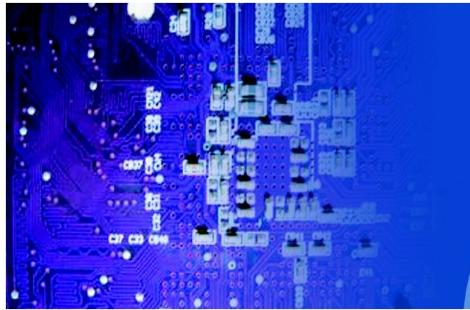
PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	IDERST	2	GND
3	PDD7	4	PDD8
5	PDD6	6	PDD9
7	PDD5	8	PDD10
9	PDD4	10	PDD11
11	PDD3	12	PDD12
13	PDD2	14	PDD13
15	PDD1	16	PDD14
17	PDD0	18	PDD15
19	GND	20	NC
21	PDREQ	22	GND
23	PDIOW#	24	GND
25	PDIOR#	26	GND
27	PIORDY	28	PD_CSEL
29	PDDACK#	30	GND
31	IRQ14	32	NC
33	PDA1	34	P66 DETECT
35	PDA0	36	PDA2
37	PDCS1#	38	PDCS3#
39	IDEACTN	40	GND
41	VCC	42	VCC
43	GND	44	GND

IDE1
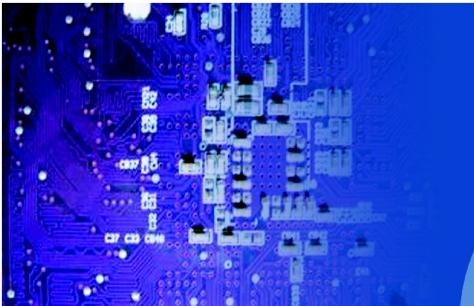
2-14 VGA Connector

VGA1: VGA Connector

The pin assignments are as follows:
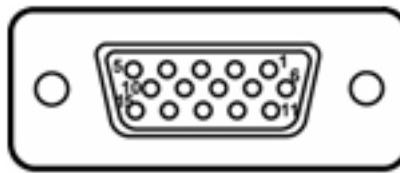
VGA1

PIN	ASSIGNMENT
1	RED
2	GREEN
3	BLUE
4	NC
5	GND
6	GND
7	GND
8	GND
9	VCC
10	GND
11	NC
12	VGA IIC DATA
13	HSYNC
14	VSYNC
15	VGA IIC CLK

2-15 Serial ATA Connector For Satadom

SATA1~SATA2: The PLP-P61x possesses two Serial ATA Connector, SATA1~SATA2. The pin assignments are as follows:

SATA: SATA Connector

The pin assignments are as follows:

PIN	ASSIGNMENT
1	GND
2	SATA_TXP0
3	SATA_TXN0
4	GND
5	SATA_RXN0
6	SATA_RXP0
7	VCC

SATA2: SATA Connector

The pin assignments are as follows:

PIN	ASSIGNMENT
1	GND
2	SATA_TXP1
3	SATA_TXN1
4	GND
5	SATA_RXN1
6	SATA_RXP1
7	VCC
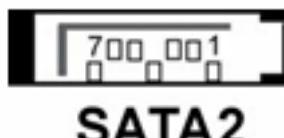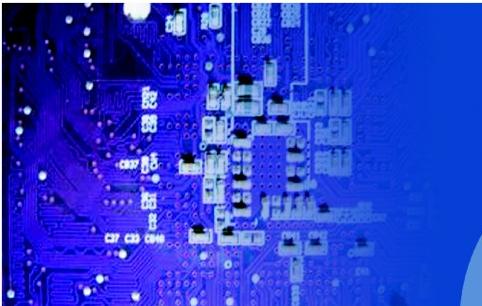
2-16 Universal Serial Bus Connector

USB1: Universal Serial Bus Connector

The pin assignments are as follows:

PIN	ASSIGNMENT
1	VCCUSB2
2	VCCUSB2
3	USB4N
4	USB5N
5	USB4P
6	USB5P
7	GND
8	GND
9	GND
10	GND
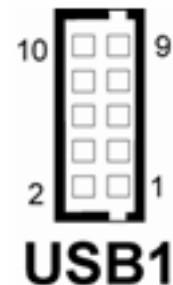
JUSB2:Universal Serial Bus Connector

The pin assignments are as follows:

PIN	ASSIGNMENT
A1	VCCUSB1
A2	USB0N
A3	USB0P
A4	GND
B1	VCCUSB1
B2	USB1N
B3	USB1P
B4	GND
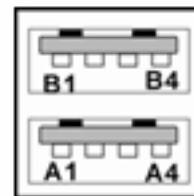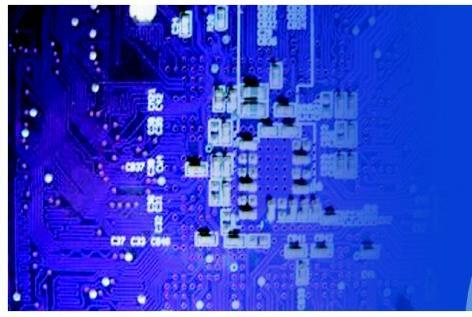
USB3:Universal Serial Bus Connector

The pin assignments are as follows:

PIN	ASSIGNMENT
1	VCCUSB3
2	VCCUSB3
3	USB6N
4	USB7N
5	USB6P
6	USB7P
7	GND
8	GND
9	GND
10	GND

J2:USB & LAN Connector

The pin assignments are as follows:

LAN:

PIN	ASSIGNMENT
1	MDI_0P
2	MDI_0N
3	MDI_1P
4	MDI_1N
5	MDI_2P
6	MDI_2N
7	MDI_3P
8	MDI_3N
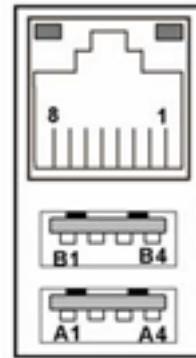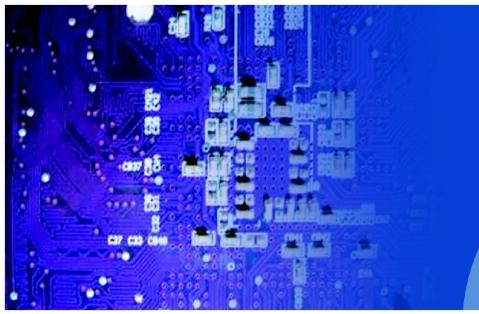
LAN LED Indicator:

Left side LED:

Green Color on	10/100 LAN Speed Indicator
Orange Color on	Giga LAN Speed Indicator
off	No LAN switch/hub connected

Right side LED:

Yellow Color Blinking	LAN Message Active
off	No LAN Message Active

USB Signal:

PIN	ASSIGNMENT
A1	VCCUSB0
A2	USB2N
A3	USB2P
A4	GND
B1	VCCUSB0
B2	USB3N
B3	USB3P
B4	GND
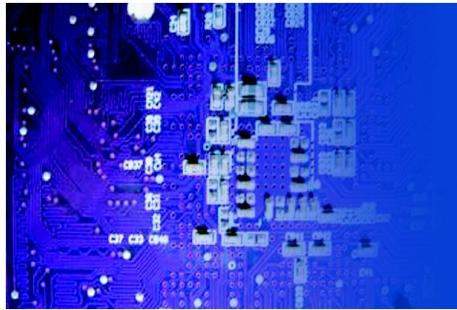
2-18 IRDA Connector

IRDA1: IrDA (Infrared) Connector

The pin assignments are as follows:

PIN	ASSIGNMENT
1	+5V
2	NC
3	IRRX
4	GND
5	IRTX

2-19 ATX Power Connector

PW:ATX 12V Connector

The pin assignments are as follows:

PIN	ASSIGNMENT
1	+5V
2	+5V
3	GND
4	GND
5	+12V
6	5VSB
7	+5V
8	GND
9	PS-ON
10	NC
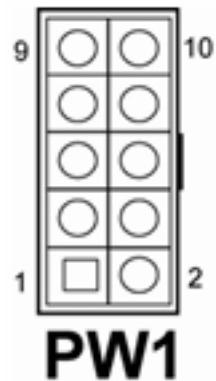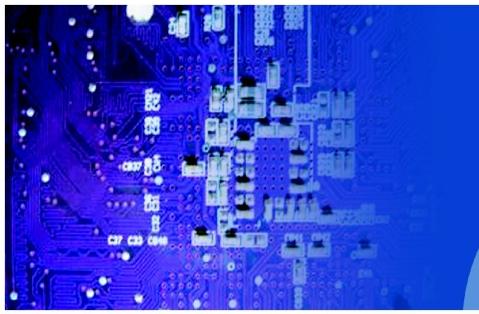
ATXPWR: ATX Connector

The pin assignments are as follows:

PIN	ASSIGNMENT
1	GND
2	GND
3	+12V
4	+12V

JATXPWR2
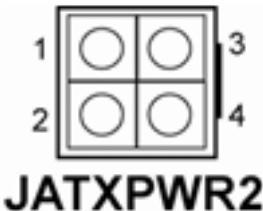
2-20 Sound Connector

JAUDIO1: Sound Connector

The pin assignments are as follows:

SPDIF (inside the Line-In hole)

PIN	ASSIGNMENT
42	GND
43	VCC
44	AC_SPDIF0

Line-In: light blue color

PIN	ASSIGNMENT
32	LINE_L
35	LINE_R
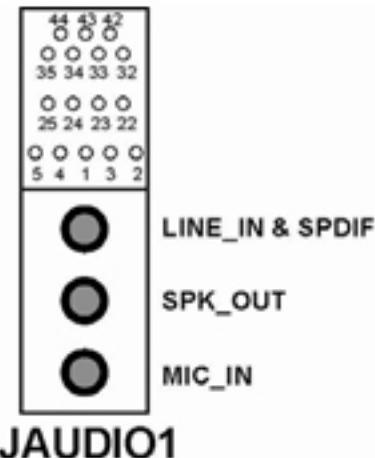
SPK-Out: light green color

PIN	ASSIGNMENT
22	SPK_L
25	SPK_R

JAUDIO1
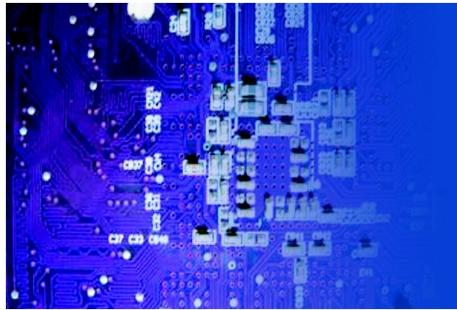
Mic-In: pink color

PIN	ASSIGNMENT
1	GND
2	MIC_IN1
5	MIC_IN2

2-21 LVDS Connector

J1: LVDS CONNECTOR

The pin assignments are as follows:
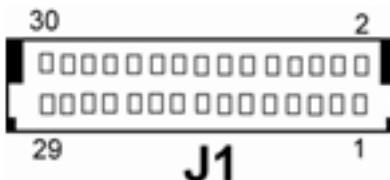
PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	LVDS_VCC	2	GND
3	CLKBM	4	CLKBP
5	GND	6	YBM2
7	YBP2	8	GND
9	YBM1	10	YBP1
11	NC	12	NC
13	YBP0	14	YBM0
15	GND	16	CLKAP
17	CLKAM	18	GND
19	YAP2	20	YAM2
21	GND	22	YAP1
23	YAM1	24	GND
25	YAP0	26	YAM0
27	NC	28	NC
29	LVDS_VCC	30	LVDS_VCC

PIN	ASSIGNMENT
1	+12V
2	GND
3	VCC
4	GND
5	ENABKL (Inverter backlight ON/OFF control signal)

J4

2-22 LVDS Panel Voltage Selection

JP4: LVDS Panel Voltage Selection. The pin assignments are as follows:

SELECTION	JUMPER SETTING (pin closed)	JUMPER ILLUSTRATION
+3.3V	1-3 2-4	JP4
+5V	3-5 4-6	JP4

*** Manufacturing Default - +3.3V.
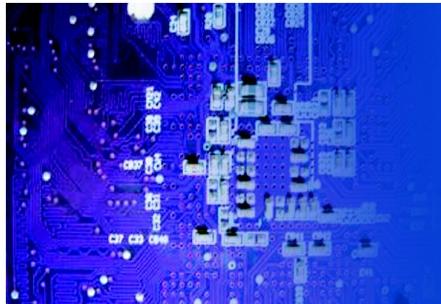
2-23 FSB Frequency Selection

JP5, JP6, JP7:FSB Frequency Selections.

The pin assignments are as follows:

SELECTION	JUMPER SETTING (pin closed)			JUMPER ILLUSTRATION
	JP5	JP6	JP7	
533 MHz	2-3	2-3	2-3	JP5 JP6 JP7
667 MHz	2-3	open	2-3	JP5 JP6 JP7
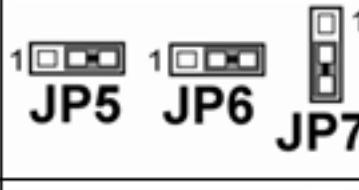
*** Manufacturing Default - 667 MHz.

2-24 Power State Selection

JP22, JP10, JP21:Power State Selections.

The pin assignments are as follows:
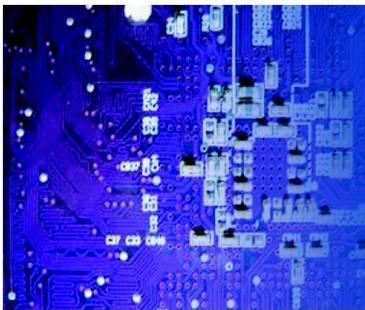
Selections	Jumper Setting			Jumper Illustrations
	JP22	JP10	JP21	
ATX	1-2	open	Open	
AT	1-2	close	1-2	
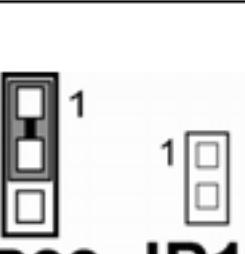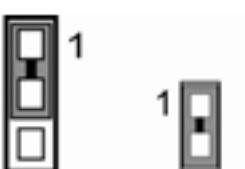
 *** Manufacturing Default - ATX.

*** JP21 Pin1 ~ Pin 2: Power State Selection

JP21 Pin 3 ~ Pin 8: Reset/ NMI Selection

2-25 Reset/NMI Selections

JP21: Reset/ NMI Selections.

Selections	Jumper Setting	Jumper Illustration
RESET	3-4 CLOSE	
NMI	5-6 CLOSE	
CLEAR WDG	7-8 CLOSE	
GPIO For Customer Application	9-10	
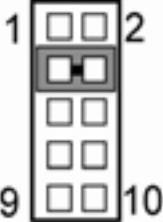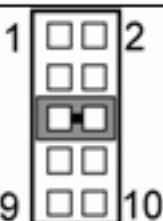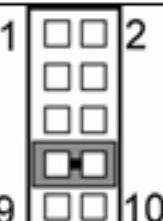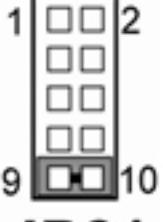
*** Manufacturing Default -RESET.
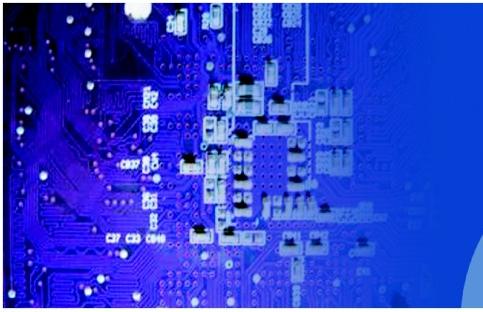
2-26 CF Card Master/ Slave Selections

JP14:CF Card Master/ Slave Selection. The pin assignments are as follows:

Selections	Jumper Setting	Jumper Illustration
Master	Close	1 JP14
Slave	Open	1 JP14

*** Manufacturing Default - Slave.

2-27 TV Out Connector

JP1: TV OUT CONNECTOR

The pin assignments are as follows:

PIN	ASSIGNMENT
1	Luminance(Y)
2	CVBS
3	GND
4	GND
5	Chromiance(UV)
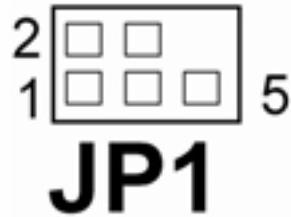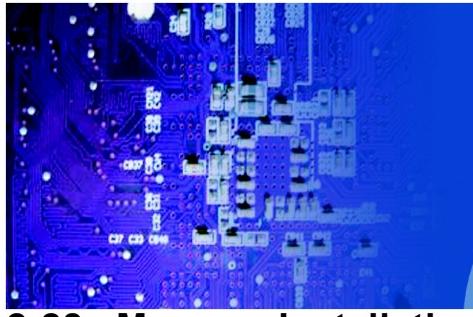
2-28   Memory Installation

PLP-P615 CPU Card can support up to4GB in one SODIMM sockets.

DRAM BANK CONFIGURATION

DIMM1	DIMM2	Total memory size
256 MB	256 MB	512 MB
512 MB	512 MB	1GB
1GB	1GB	2GB
2GB	2GB	4GB

2-29   PCI-Express Card Selections

JP9: PCI-Express Card Selection.

The pin assignments are as follows:

Selections	Jumper Setting	Jumper Illustration
PCI-E x 1 PCI-E x 4	Close	
PCI-E x 16	Open	
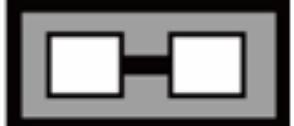
*** Manufacturing Default - PCI-E x 16.

CHAPTER 3 SOFTWARE UTILITIES

3-1 Introduction

Enclosed with our PC6152 package is our driver utility, which may comes in a form of a CD ROM disc or floppy diskettes.For CD ROM disc user, you will only need some of the files contained in the CD ROM disc, please kindly refer to the following chart:

Filename (Assume that CD ROM drive is D :)	Purpose
D:\Driver\VGA	Intel® 945GME For VGA driver installation
D:\Driver\FLASH	For BIOS update utility
D:\Driver\LAN	Intel® 82573V For LAN Driver installation
D:\Driver\Sound	Realtek ALC655 AC'97 For Sound driver installation
D:\Driver\UTILITY	Intel® Chipset Software Installation Utility For Win 2000, XP, Vista
D:\Driver\USB 2.0	USB 2.0 Software Installation Utility For Win 2000, XP

User should remember to install the Utility right after the OS fully installed.

3-2 VGA Driver Utility

The VGA interface embedded with our PLP-P61x can support a wide range of display. You can display CRT, PCI-E (SDVO) simultaneously with the same mode.

1. Win 2000 program
2. Win XP program
3. Win Vista program
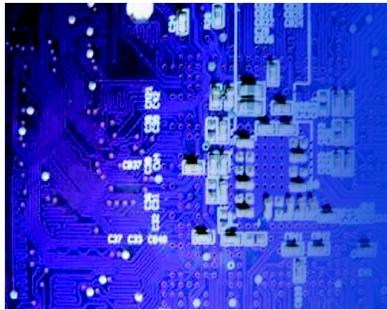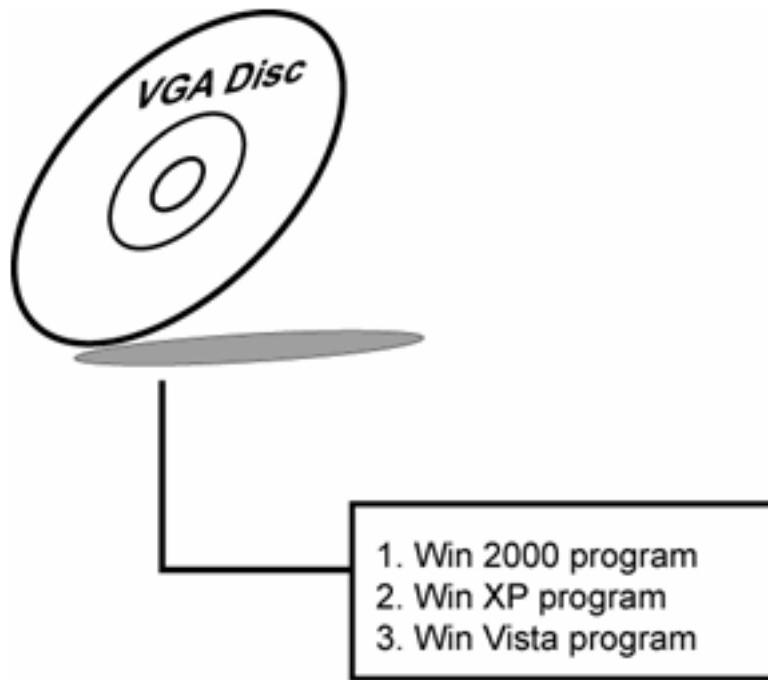
3-2-1 Installation of VGA Driver:

To install the VGA Driver, simply follow the following steps:

1. Place insert the Utility Disk into Floppy Disk Drive A/B or CD ROM drive.

2. Under Windows 2000/XP/Vista system, go to the directory where

VGA driver is located.

3. Click Setup.exe file for VGA driver installation.

4. Follow the instructions on the screen to complete the installation.

5. Once installation is completed, shut down the system and restart in order for the changes to take effect.
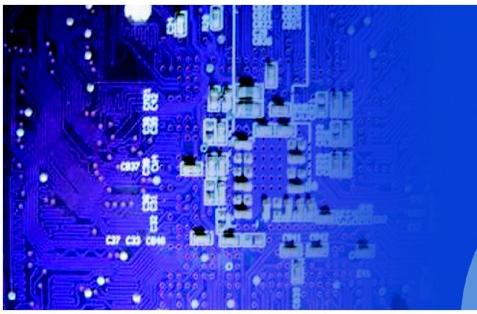
3-3 Flash BIOS Update

3-3-1 System BIOS Update:

Users of PLP-P61x can use the program "Awdflash.exe" contained in the Utility Disk for system BIOS and VGA BIOS update.

3-3-2 To Update VGA BIOS for LCD Flat Panel Display:

As PC6152 user, you have to update the VGA BIOS for your specific LCD flat panel you are going to use. For doing this, you need two files. One is the "Awdflash.exe" file and the other is the VGA BIOS for ATI Rage Mobility M6 file for LCD panel display. Both file must be provided by the vendor or manufacturer. When you get these two files ready, follow the following steps for updating your VGA BIOS:

1. Install "Awdflash.exe" from Utility Disk to Drive C.

2. Insert the VGA BIOS file you have obtained from the vendor.

Type the path to Awdflash.exe and execute the VGA BIOS update with file B531xxxx.bin

3. C:\UTIL\AWDFLASH>AWDFLASH B531xxxx.bin

4. The screen will display as the table fount on the next page:

```
FLASH MEMORY WRITER v7.XX
(C) Award Software 2001 All Rights Reserved

        Flash Type – SST 49LF004A   /3.3V
        File Name to Program:   B531xxxx.bin
               Checksum:   XXXXX

Error Message:   Do You Want To Save BIOS (Y/N)
```
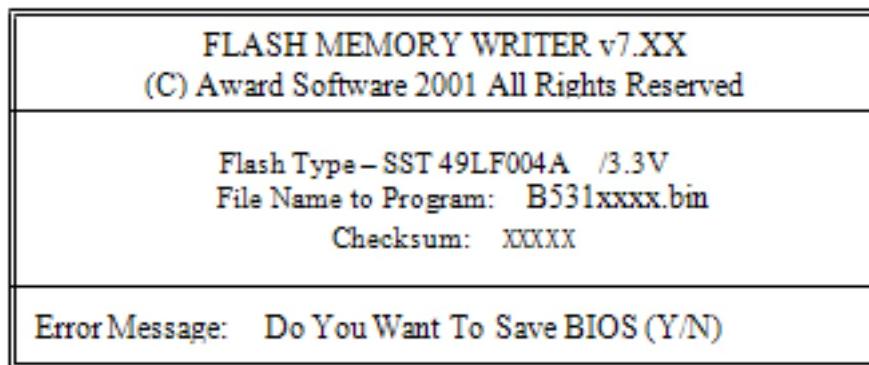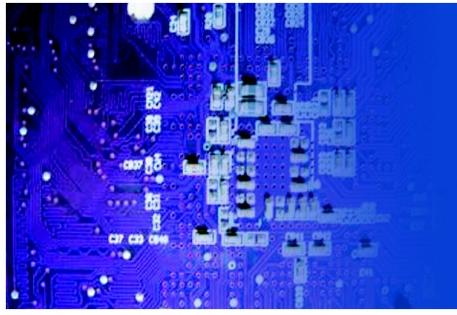
If you want to save up the original BIOS, enter "Y" and press < Enter >.

If you choose "N", the following table will appear on screen.

```
FLASH MEMORY WRITER v7.XX
(C) Award Software 2001 All Rights Reserved


        Flash Type – SST 49LF004A   /3.3V
        File Name to Program:    B531xxxx.bin
                 Checksum:   XXXXX


Error Message :   Are You Sure To Program (Y/N)
```
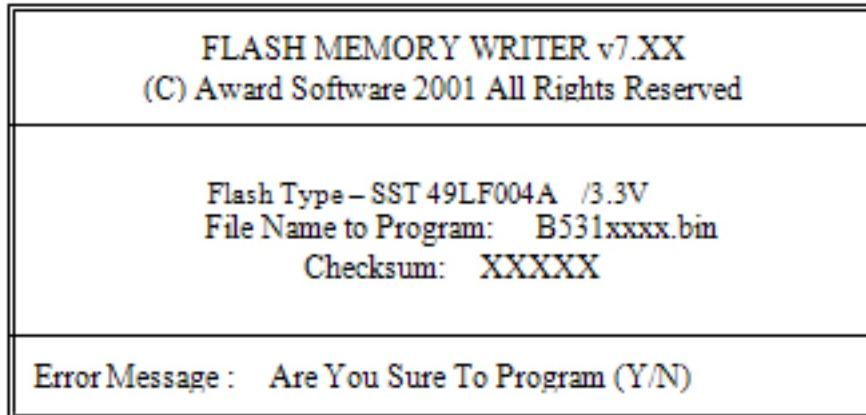
Select "Y", and the BIOS will be renewed. When you are refreshing the

BIOS, do not turn off or reset the system, or you will damage the BIOS. After you have completed all the programming, the screen displays the table below:

```
FLASH MEMORY WRITER v7.XX
(C) Award Software 2001 All Rights Reserved

        Flash Type – SST 49LF004A   /3.3V
        File Name to Program:    B531xxxx.bin
                 Checksum:   XXXXX

        Reset System or Power off to
         accomplish update process!

F1: Reset   F10: Exit
```
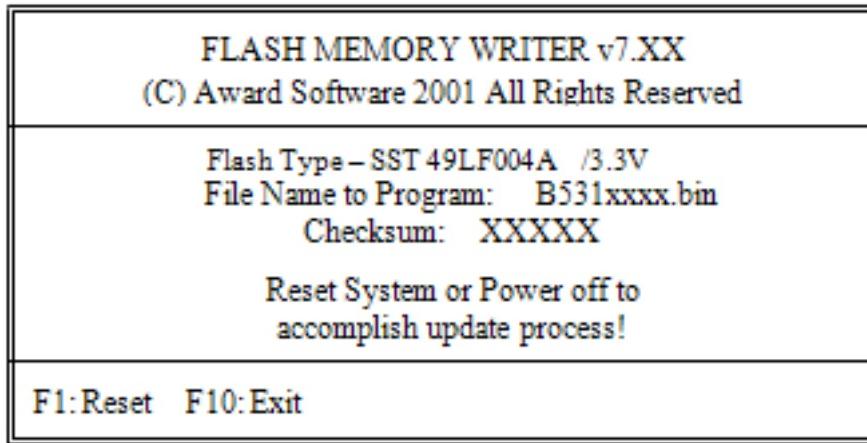
Please reset or power off the system, and then the Flash BIOS is fully implemented.
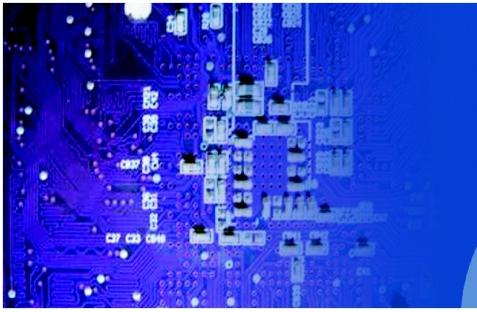
3-4 Lan Driver Utility

3-4-1 Introduction

PC6152 is enhanced with LAN function that can support various network adapters. Installation programs for LAN drivers are listed as follows:

1. Win 2000 program
2. Win XP program
3. Win Vista program
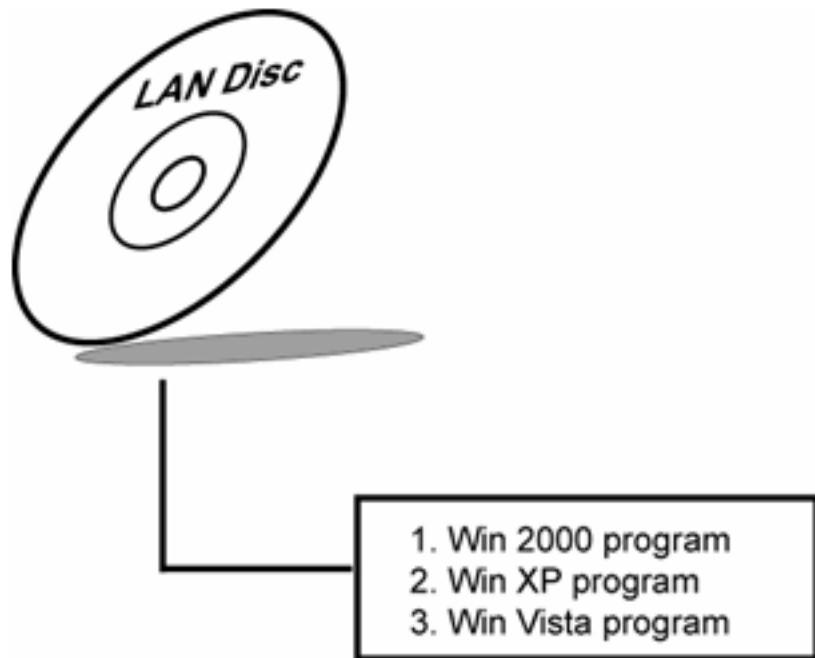
For more details on Installation procedure, please refer to Readme.txt file found on LAN DRIVER UTILITY.

3-5 Sound Driver Utility

3-5-1 Introduction

The Realtek ALC655 sound function enhanced in this system is fully compatible with Windows 2000, Windows XP, and Windows Vista. Below, you will find the content of the Sound driver :

```
                    Sound Disk
```
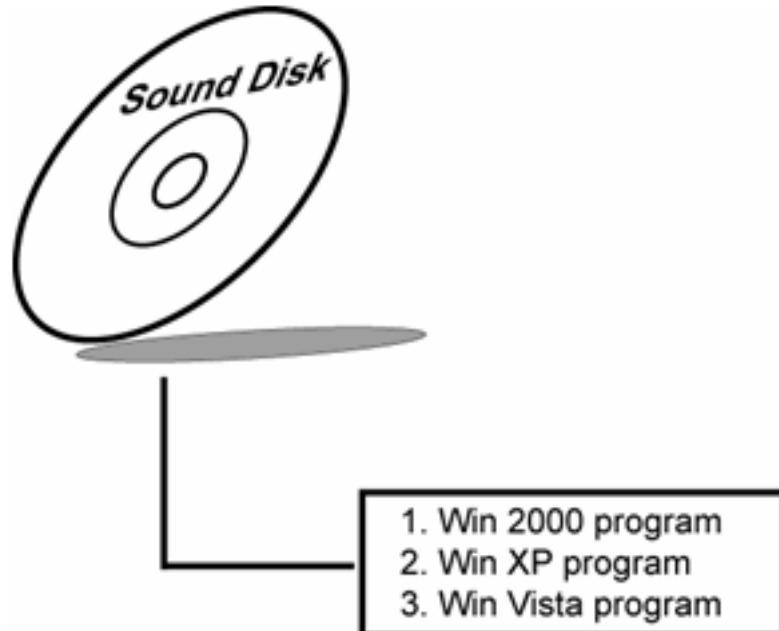
```
┌─────────────────────────────┐
│ 1. Win 2000 program         │
│ 2. Win XP program           │
│ 3. Win Vista program        │
└─────────────────────────────┘
```

3-5-2   Installation Procedure for Windows 2000/XP/Vista

1. From the task bar, click on Start, and then Run.

2. In the Run dialog box, type D:\Sound\path\setup, where

"D:\Sound\pathname" refers to the full path to the source files.

3. Click on the OK button or press the ENTER key.

4. Click on the "Next" and OK prompts as they appear.

5. Reboot the system to complete the driver installation.
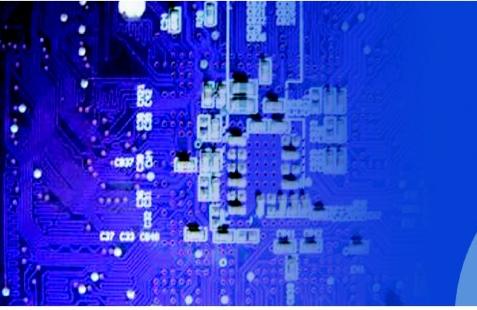
3-6 Intel Chipset Software Installation Utility
3-6-1 Introduction

The Intel® Chipset Software Installation Utility installs to the target system the Windows* INF files that outline to the operating system how the chipset components will be configured. This is needed for the proper functioning of the following features:

-Core PCI and ISAPNP Services

-AGP Support

-IDE/ATA33/ATA66/ATA100 Storage Support

-USB Support

-Identification of Intel® Chipset Components in Device Manager

3-6-2 Installation of Utiltiy for Windows 2000/XP/Vista

The Utility Pack is to be installed only for Windows 2000, XP, and Vista program.

It should be installed right after the OS installation, kindly follow the following steps:

1. Place insert the Utility Disk into Floppy Disk Drive A/B or CD ROM drive.

2. Under Windows 2000/XP/Vista system, go to the directory where

Utility Disc is located.

3. Click Setup.exe file for utility installation.

4. Follow the instructions on the screen to complete the installation.

5. Once installation is completed, shut down the system and restart in order for the changes to take effect.
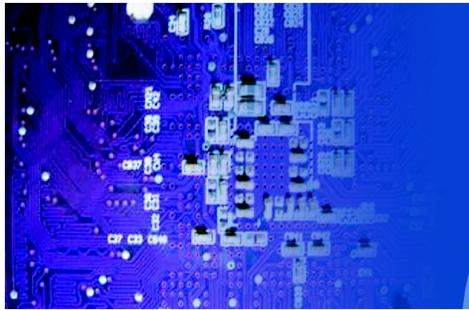
3-7 USB2.0 Software Installation Utility

3-7-1 Installation of Utility for Windows 2000/XP

Intel USB 2.0 Enhanced Host Controller driver can only be used on Windows 2000 and Windows XP on Intel Desktop boards. It should be installed right after the OS installation, kindly follow the following steps:
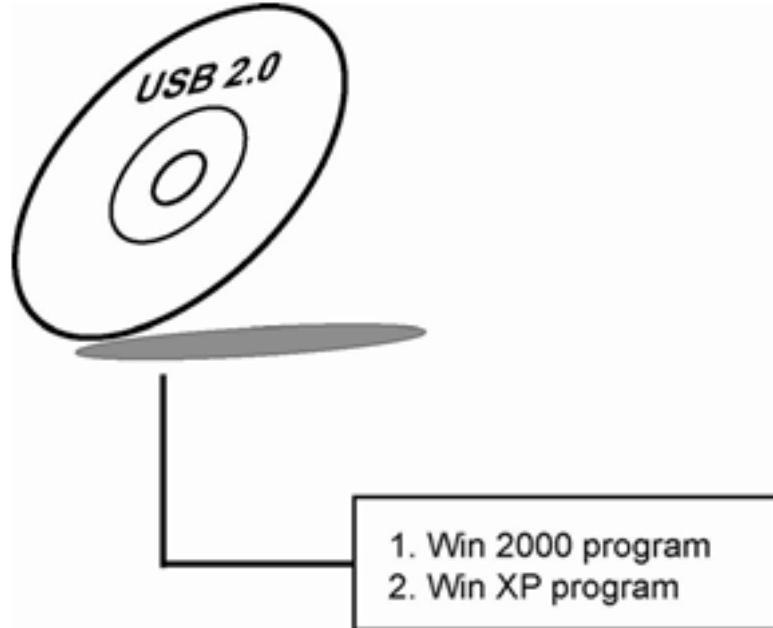
1. Place insert the Utility Disk into Floppy Disk Drive A/B or CD ROM drive.

2. Under Windows 2000, and XP system, go to the directory where

Utility Disc is located.

3. Start the "System" wizard in control panel. (Click Start/Settings/Control Panel).

4. Select "Hardware" and click "Device Manager " button.

5. Double Click "USB Root Hub".

6. Select "Driver".

7. Click "Install" to install the driver.

8. Follow the instructions on the screen to complete the installation.

9. Click "Finish" after the driver installation is complete.
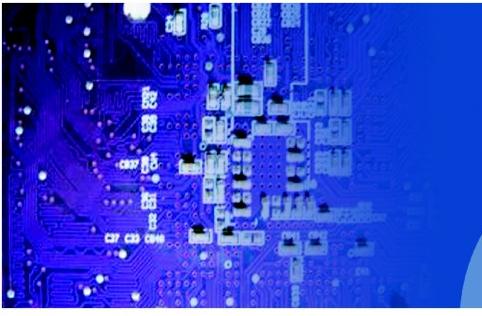
3-8 Watchdog Timer Configuration

The Watch-dog Timer has a programmable time-out ranging from 1 to 255 minutes with one minute resolution, or 1 to 255 seconds with 1 second resolution. The units of the WDT timeout value are selected via bit[7] of the WDT_TIMEOUT register, which is located on I/O Port address 0x865h. The WDT time-out value is set through the WDT_VAL Runtime register, which is located on I/O Port address 0x866h. Setting the WDT_VAL register to 0x00 disables the WDT function Setting the WDT_VAL to any other non-zero value will cause the WDT to reload and begin counting down from the value loaded. Setting the Register located on I/O address 0x867h and 0x868h as 00h to finish timer configuration.

Example Program

Example Code: (1)

```
; ---------------------------------------------------------------------------------------

; Enable Watch-Dog Timer

;---------------------------------------------------------------------------------------

mov    dx, (800h+65h) ; Time counting Unit minute or second

mov    al, 80h ; al = 00h : minute, or al = 80h : second

out    dx, al

mov    dx, (800h+66h)

mov    al, 20  ; al = Watch Dog Timer Second (s) , 20 sec(s)

ou     dx, al

mov    dx, (800h+67h)

mov    al, 00h

out    dx, al

mov    dx, (800h+68h) ; Start Watch Dog Timer

mov    al, 00h

out    dx, al
```
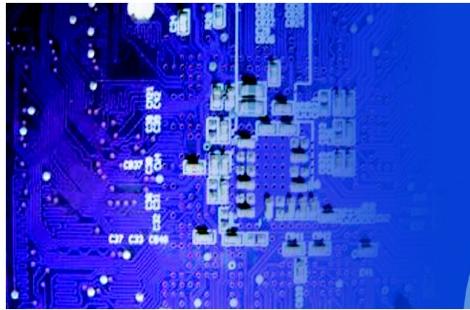
(2)

```
;-------------------------------------------------------------------------------------

; Disable Watch-Dog Timer

;-------------------------------------------------------------------------------------

mov    dx, (800h+66h) ; Disabled Watch Dog

mov    al, 00h

out    dx, al

mov    dx, (800h+67h)

mov    al, 00h

out    dx, al

mov    dx, (800h+68h) ; Clear Status Bit

mov    al, 00h

out    dx, al
```
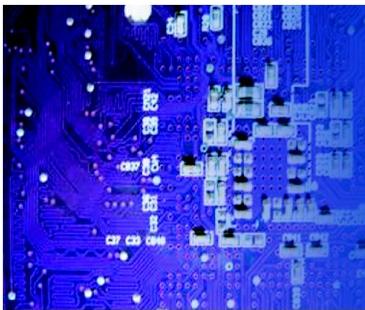
CHAPTER 4 AWARD BIOS SETUP

4-1 Introduction

This chapter will show you the function of the BIOS in managing the features of your system. The PLP-P61x Intel® Core 2 Duo/ Core Solo Mini-ATX Motherboard is equipped with the BIOS for system chipset from Phoenix -Award Software Inc. This page briefly explains the function of the BIOS in managing the special features of your system. The following pages describe how to use the BIOS for system chipset Setup menu.

Your application programs (such as word processing, spreadsheets, and games) rely on an operating system such as DOS or OS/2 to manage such things as keyboard, monitor, disk drives, and memory.

The operating system relies on the BIOS (Basic Input and Output system), a program stored on a ROM (Read-only Memory) chip, to initialize and configure your computer's hardware. As the interface between the hardware and the operating system, the BIOS enables you to make basic changes to your system's hardware without having to write a new operating system.

The following diagram illustrates the interlocking relationships between the system hardware, BIOS, operating system, and application program:
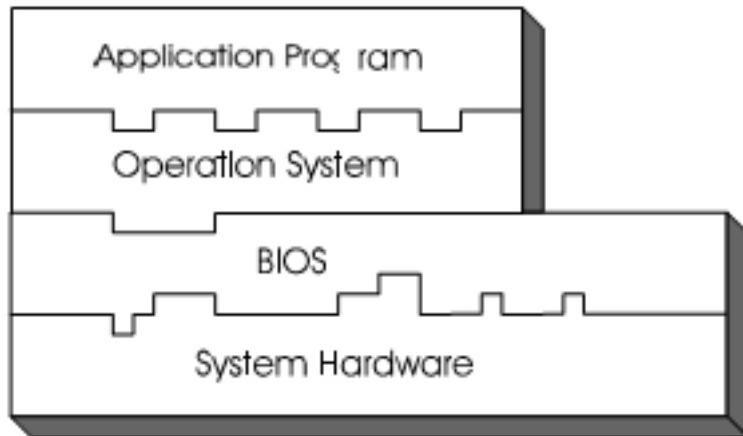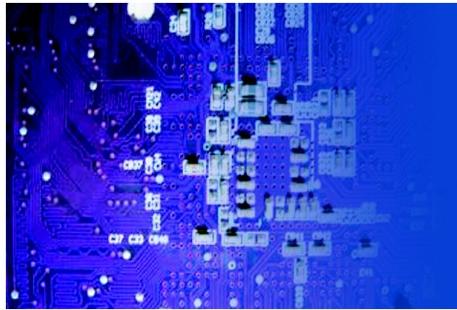
4-2   Entering Setup

When the system is powered on, the BIOS will enter the Power-On Self Test (POST) routines and the following message will appear on the lower screen:

PRESS <DEL> TO ENTER SETUP, ESC TO SKIP MEMORY TEST

As long as this message is present on the screen you may press the <Del> key (the one that shares the decimal point at the bottom of the number keypad) to access the Setup program. In a moment, the main menu of the Award SETUP program will appear on the screen:

Phoenix - AwardBIOS CMOS Setup Utility

► Standard CMOS Features	Load Fail-Safe Defaults
► Advanced BIOS Features	Load Optimized Defaults
► Advanced Chipset Features	Set Supervisor Password
► Integrated Peripherals	Set User Password
► Power Management Setup	Save & Exit Setup
► PnP/PCI Configurations	Exit Without Saving
► PC Health Status	

Esc : Quit   ↑↓→← : Select Item
F10 : Save & Exit Setup

Time, Date, Hard Disk Type....

Setup program initial screen

You may use the cursor the up/down keys to highlight the individual menu items. As you highlight each item, a brief description of the highlighted selection will appear at the bottom of the screen.
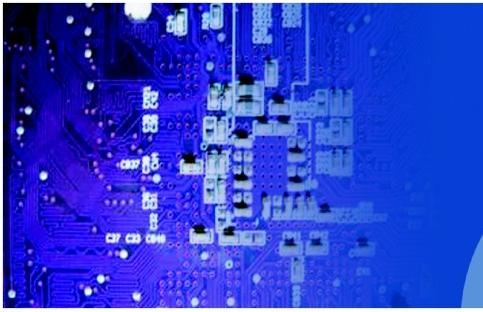
4-3 The Standard CMOS Features

Highlight the "STANDARD CMOS FEATURES" and press the <ENTER> key and the screen will display the following table:

Phoenix - AwardBIOS CMOS Setup Utility Standard CMOS Features

```
Date (mm:dd:yy)              Sun, Feb  2  2003        Item Help
Time (hh:mm:ss)               21 :  3:   7
                                                      Menu Level  ▶
► IDE Channel 0 Master       [ST320014A]
► IDE Channel 0 Slave        [None]                   Change the day,
► IDE Channel 1 Master       [None]                   month, year and
► IDE Channel 1 Slave        [None]                   century
► IDE Channel 2 Master       [HDS728080PLA380]
► IDE Channel 2 Slave        [HDS728080PLA380]
► IDE Channel 3 Master       [HDS728080PLA380]
► IDE Channel 3 Slave        [HDS728080PLA380]


  Video                      [EGA/VGA]
                             [All Errors]
    Halt On

  Base Memory                     640K
  Extended Memory            2006912K
  Total Memory               2087936K

↑↓→←: Move  Enter: Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help
    F5: Previous Values    F6: Fail-Safe Defaults   F7:Optimized Defaults
```

CMOS Setup screen:

In the above Setup Menu, use the arrow keys to highlight the item and then use the <PgUp> or <PgDn> keys to select the value you want in each item.

Date:

< Month >, < Date > and <Year >. Ranges for each value are in the CMOS Setup Screen, and the week-day will skip automatically.

Time:

< Hour >, < Minute >, and < Second >. Use 24 hour clock format, i.e., for PM numbers, add 12 to the hour. For example: 4: 30 P.M. You should enter the time as 16:30:00.
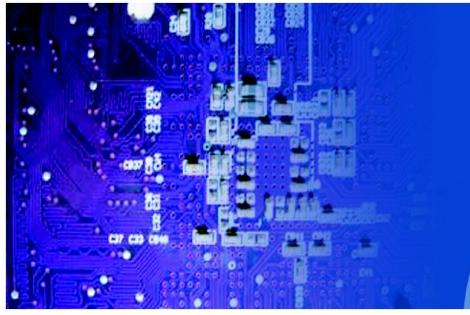
IDE Primary Master / Slave: IDE Secondary Master / Slave:

The BIOS can automatically detect the specifications and optimal operating

mode of almost all IDE hard drives. When you select type AUTO for a hard drive, the BIOS detect its specifications during POST, every time system boots.

If you do not want to select drive type AUTO, other methods of selecting drive type are available:

1.Match the specifications of your installed IDE hard drive(s) with the preprogrammed values for hard drive types 1 through 45.

2.Select USER and enter values into each drive parameter field.

3.Use the IDE HDD AUTO DETECTION function in Setup. Here is a brief explanation of drive specifications:

Type: The BIOS contains a table of pre-defined drive types. Each defined drive type has a specified number of cylinders, number of heads, write precompensation factor, landing zone, and number of sectors. Drives whose specifications do not accommodate any predefine type are classified as type USER.

o Size: Disk drive capacity (approximate). Note that this size is usually greater than the size of a formatted disk given by a disk-checking program.

o Cyls: number of cylinders.

o Head: number of heads.

o Precomp: write precompensation cylinders.

o Landz: landing zone.

o Sector: number of sectors.

o Mode: Auto, Normal, Large or LBA.

Auto: The BIOS automatically determines the optimal mode.
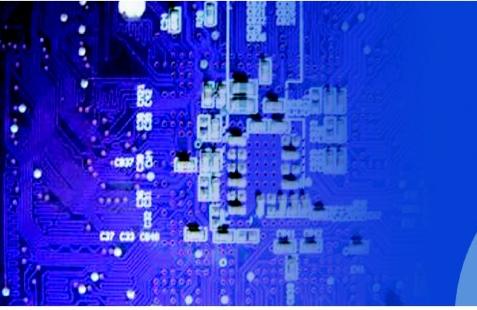
- Normal: Maximum number of cylinders, heads, sectors supported are 1024, 16 and 63.

- Large: For drives that do not support LBA and have more than 1024 cylinders.

- LBA (Logical Block Addressing): During drive accesses, the IDE controller transforms the data address described by sector, head and cylinder number into a physical block address, significantly improving data transfer rates. For drives greater than 1024 cylinders.

VIDEO:

This category selects the type of video adapter used for the primary system monitor. Although secondary monitors are supported, you do not have to select the type in Setup. Available Options are as follows:

EGA/VGA	Enhanced Graphics Adapter/Video Graphics Array. For EGA, VGA, SEGA, SVGA or PGA monitor adapters.
CGA 40	Color Graphics Adapter, power up in 40 column mode.
CGA 80	Color Graphics Adapter, power up in 80 column mode.
MONO	Monochrome adapter, includes high resolution monochrome adapters.

HALT ON:

This category allows user to choose whether the computer will stop if an error is detected during power up. Available options are "All errors", "No errors", "All, But keyboard", "All, But Diskette", and "All But Disk/Key".

BASE MEMORY:

Displays the amount of conventional memory detected during boot up.

EXTENDED MEMORY:

Displays the amount of extended memory detected during boot up.

TOTAL MEMORY:

Displays the total memory available in the system.

HARD DISK ATTRIBUTES:

Type	Cylinders	Heads	V-P comp	LZone	Sect	Capacity
1	306	4	128	305	17	10
2	615	4	300	615	17	20
3	615	6	300	615	17	30
4	940	8	512	940	17	62
5	940	6	512	940	17	46
6	615	4	65535	615	17	20
7	642	8	256	511	17	30
8	733	5	65535	733	17	30
9	900	15	65535	901	17	112
10	820	3	65535	820	17	20
11	855	5	65535	855	17	35
12	855	7	65535	855	17	49
13	306	8	128	319	17	20
14	733	7	65535	733	17	42
15	000	0	0000	000	00	00
16	612	4	0000	663	17	20
17	977	5	300	977	17	40
18	977	7	65535	977	17	56
19	1024	7	512	1023	17	59
20	733	5	300	732	17	30
21	733	7	300	732	17	42
22	733	5	300	733	17	30
23	306	4	0000	336	17	10
24	977	5	65535	976	17	40
25	1024	9	65535	1023	17	76
26	1224	7	65535	1223	17	71
27	1224	11	65535	1223	17	111
28	1224	15	65535	1223	17	152
29	1024	8	65535	1023	17	68
30	1024	11	65535	1023	17	93
31	918	11	65535	1023	17	83
32	925	9	65535	926	17	69
33	1024	10	65535	1023	17	85
34	1024	12	65535	1023	17	102
35	1024	13	65535	1023	17	110
36	1024	14	65535	1023	17	119
37	1024	2	65535	1023	17	17
38	1024	16	65535	1023	17	136
39	918	15	65535	1023	17	114
40	820	6	65535	820	17	40
41	1024	5	65535	1023	17	42
42	1024	5	65535	1023	26	65
43	809	6	65535	852	17	40
44	809	6	65535	852	26	61
45	776	8	65335	775	33	100
47			AUTO			
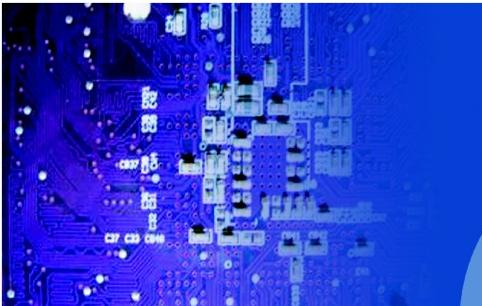
4-4   The Advanced BIOS Features

Choose the "ADVANCED BIOS FEATURES" in the main menu, the screen shown as below.

Phoenix - AwardBIOS CMOS Setup Utility Advanced BIOS Features

```
 ► Hard Disk Boot Priority        [Press Enter]        Item Help
   USB Flash Disk Type            [HDD]
   First Boot Device              [USB-CDROM]
   Second Boot Device             [Hard Disk]        Menu Level   ►
   Third Boot Device              [LS120]
   Boot Other Device              [Enabled]          Select Hard Disk Boot
   Security Option                [Setup]
   APIC Mode                      [Enabled]          Device Priority
   MPS Version Control For OS      [1.4]

 ↑↓→←: Move  Enter: Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help
    F5: Previous Values    F6: Fail-Safe Defaults   F7:Optimized Defaults
```

BIOS Features Setup Screen

The "BIOS FEATURES SETUP" allow you to configure your system for basic operation.   The user can select the system's boot-up sequence and security.

A brief introduction of each setting is given below.

HARD DISK BOOT PRIORITY:

The options for these items are found in its sub menu. By pressing the <ENTER> key, you are prompt to enter the sub menu of the detailed options as shown below:

Phoenix - Award CMOS Setup Utility Hard Disk Boot Priority

```
 1.  Ch0 M.     : ST320014A              Item Help
 2.  CH2 M.     : HDS728080PLA380
 3.  CH3 M.     : HDS728080PLA380
 4.  CH2 S.     : HDS728080PLA380      Menu Level   ►
 5.  CH3 S.     : HDS728080PLA380
 6.  Bootable Add-in Cards             Use<    > or <    > to
                                       select a device, then press <+>
                                       to move it up, or <-> to move it
                                       down the list. Press <ESC> to
                                       exit this menu.

 ↑↓→←:Move   Enter: Select  +/-/PU/PD:Value  F10:Save   ESC:Exit   F1:General Help
    F5: Previous Values    F6:Fail-Safe Defaults   F7:Optimized Defaults
```
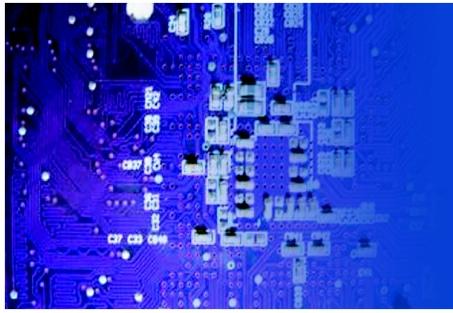
Select Hard Disk Boot Device Priority

USB FLASH DISK TYPE:

Select USB device type.

FIRST/SECOND/ THIRD/ OTHER BOOT DEVICE:

The BIOS attempt to load the operating system from the devices in the sequence selected in these items.

SECURITY OPTION:

This category allows you to limit access to the system and Setup, or just to Setup.

System	The system will not boot and access to Setup will be denied if the correct password is not entered at the prompt.
Setup	The system will boot, but access to Setup will be denied if the correct password is not entered at the prompt.

To disable security, select PASSWORD SETTING at Main Menu and

then you will be asked to enter password. Do not type anything and just

press <Enter>, it will disable security. Once the security is disabled, the system will boot and you can enter Setup freely.

APIC MODE:

To Enable Advanced Programmable Interrupt Controller

MPS VERSION CONTROL FOR OS:

This option is only valid for multiprocessor motherboards as it specifies the version of the Multiprocessor Specification (MPS) that the motherboard will use. The MPS is a specification by which PC manufacturers design and build Intel architecture systems with two or more processors.

4-5 Advanced Chipset Features

Choose the "ADVANCED CHIPSET FEATURES" from the main menu, the screen shown as below.

Phoenix - AwardBIOS CMOS Setup Utility Advanced Chipset Features

```
   DRAM Timing Selectable        [By SPD]              Item Help
X CAS Latency Time               [Auto]
X DRAM RAS# to CAS# Delay        [Auto]
X DRAM RAS# Precharge            [Auto]
X Precharge dealy (tRAS)         [Auto]            Menu Level   ►
X System Memory Frequency        [Auto]

   ** VGA Setting **
   DVMT Mode                     [DVMT]
   DVMT / FIXED Memory Size      [128 MB]
   Boot Display                  [CRT]
   Panel Type                    [640x480 18-bit]
   TV Format                     [Auto]
   PCI SERR# NMI                 [Disabled]

↑↓→←: Move  Enter: Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help
   F5: Previous Values   F6: Fail-Safe Defaults  F7:Optimized Defaults
```

Chipset Features Setup Screen

This parameter allows you to configure the system based on the specific features of the installed chipset. The chipset manages bus speed and access to system memory resources, such as DRAM and the external cache. It also coordinates communications between conventional ISA bus and the PCI bus. It must be stated that these items should never need to be altered. The default settings have been chosen because they provide the best opera- ting conditions for the system. The only time you might consider making any changes would be if you discovered that data was being lost while using your system.

DRAM TIMEING SELECTABLE:

The value in this field depends on performance parameters of the installed memory chips (DRAM). Do not change the value from the factory setting unless you install new memory that has a different perfor- mance rating than the original DRAMs.

CAS LATENCY TIME:

When synchronous DRAM is installed, the number of clock cycles of CAS latency depends on the DRAM timing.
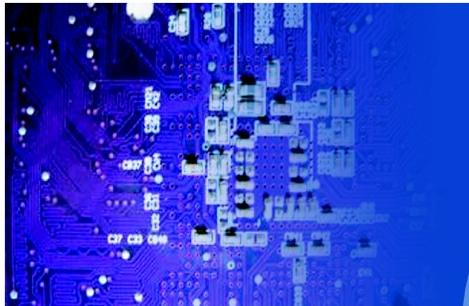
DRAM RAS# TO CAS# DELAY:

This item let you insert a timing delay between the CAS and RAS strobe signals, used when DRAM is written to, read from, or refreshed. Fast gives faster performance; and Slow gives more stable performance. This field applies only when synchronous DRAM is installed in the system. The choices are 2 and 3.

DRAM RAS# PRECHARGE TIME:

If an insufficient number of cycles is allowed for the RAS to accumulate its charge before DRAM refresh, the refresh may be incomplete and the DRAM may fail to retain data. Fast gives faster performance; and Slow gives more stable performance. This field applies only when synchro-nous DRAM is installed in the system. The choices are 2 & 3.

PRECHARGE DEALY (tRAS):

Precharge Delay This setting controls the precharge delay, which determines the timing delay for DRAM precharge

System Memory Frequency:

Allow to choose different frequency of memory module.

DVMT MODE:

Intel Dynamic Video Memory Technology Mode.

DVMT/FIXED MEMORY SIZE:

DVMT Memory Size Select.

BOOT DISPLAY:

To select the boot-up display type.

Panel Type:

This field allows user to decide the LVDS panel resolution

TV FORMAT:

To select TV-Format type

PCI SERR# NMI:

To Enable/Disable the PCI SERR# interrupt
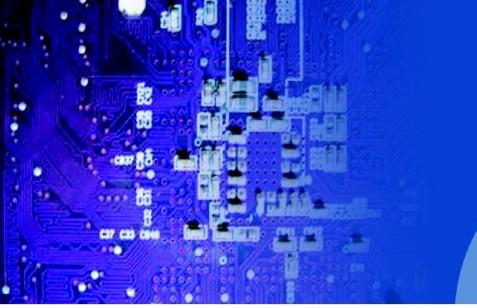
4-6 Integrated Peripherals

Choose "INTEGRATED PERIPHERALS" from the main setup menu, a display will be shown on screen as below:

Phoenix - AwardBIOS CMOS Setup Utility Integrated Peripherals

```
X OnChip IDE Device          [Press Enter]
X Onboard Device             [Press Enter]     Item Help
X SuperIO Device             [Press Enter]
                                               Menu Level    ►
   WatchDog Support          [Disabled]

↑↓→←: Move  Enter: Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help
   F5: Previous Values    F6: Fail-Safe Defaults   F7:Optimized Defaults
```

Integrated Peripherals Setup Screen

By moving the cursor to the desired selection and by pressing the <F1> key, the all options for the desired selection will be displayed for choice.

If bios setup menu item supports USB device boot, it will cause Win9x detects the same storages twice when the system is rebooted, and USB HDD will fail. Note: this cause just happen under Win9x, the phenomenon is a limitation.
ONCHIP IDE DEVICE:

The options for these items are found in its sub menu. By pressing the <ENTER> key, you are prompt to enter the sub menu of the detailed options as shown below:
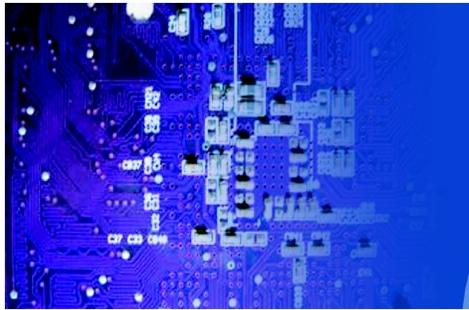
Phoenix - Award CMOS Setup Utility OnChip IDE Device

```
         IDE HDD Block Mode              [Enabled]              Item Help
         IDE DMA transfer access         [Enabled]
         OnChip Primary PCI IDE          [Enabled]       Menu Level    ►
         IDE Primary Master PIO          [Auto]
         IDE Primary Slave PIO           [Auto]          If your IDE hard
         IDE Primary Master UDMA         [Auto]          drive supports
         IDE Primary Slave UDMA          [Auto]          block mode select
         OnChip Secondary PCI IDE        [Enabled]       Enabled for
         IDE Secondary Master PIO        [Auto]          automatic
         IDE Secondary Slave PIO         [Auto]          detection of the
         IDE Secondary Master UDMA       [Auto]          optional number
         IDE Secondary Slave UDMA        [Auto]          of block
                                                         read/writes per
         *** On-Chip Serial ATA Setting ***             sector the drive
         SATA Mode                       [IDE]           can support.
         On-Chip Serial ATA              [Auto]
       X PATA IDE Mode                   Primary
         SATA Port                       P1, P3 is Secondary

    ↑↓→←:Move   Enter: Select  +/-/PU/PD:Value  F10:Save   ESC:Exit   F1:General Help
         F5: Previous Values     F6:Fail-Safe Defaults    F7:Optimized Defaults
```

Descriptions on each item above are as follows:

1. IDE HDD Block Mode

Block mode is also called block transfer, multiple commands, or multiple sector read/write. If your IDE hard drive supports block mode (most new drives do), select Enabled for automatic detection of the optimal number of block read/writes per sector the drive can support

2. IDE DMA Transfer Access

To Enable/Disable the IDE DMA transfer access

3. OnChip Primary PCI IDE

The integrated peripheral controller contains an IDE interface with support for two IDE channels. Select Enabled to activate each channel separately.

4. Primary Master/Slave PIO, Secondary Master/Slave PIO

The four IDE PIO fields allow you to set a PIO mode (0-4) for each of the four IDE devices that the onboard IDE interface supports.   Modes
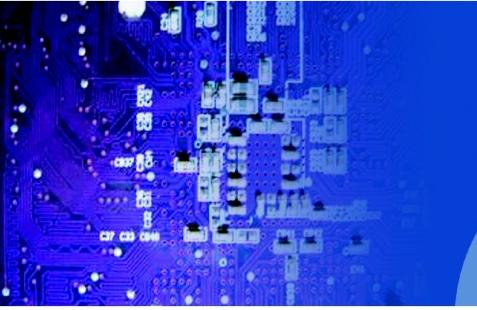
0 through 4 provide successively increased performance.   In Auto mode, the system automatically determines the best mode for each device.

5. SATA Mode:

Set the Serial ATA configuration. When set in Advanced Host Controller Interface (AHCI) or RAID mode, the SATA controller is set to Native mode. Configuration options: [IDE] [RAID] [AHCI].

6. Primary Master/Slave UDMA Secondary Master/Slave UDMA

Ultra DMA/33 implementation is possible only if your IDE hard drive

supports it and the operating environment includes a DMA driver (Windows 95 OSR2 or a third-party IDE bus master driver).   If you hard drive and your system software both support Ultra DMA/33, select Auto to enable BIOS support.

7. On-Chip Serial ATA:

[Disabled]: Disabled SATA Controller.

[Auto]: Auto arrange by BIOS.

[Combined Mode]: PATA and SATA are combined. Max.of 2 IDE

drives in each channel.

[Enhanced Mode]: Enable both SATA and PATA. Max.of 6 IDE drives are supported.

[SATA Only]: SATA is operating in legacy mode.

8. PATA IDE Mode

To select PATA IDE Mode sequence

9. SATA Port

According PATA IDE Mode to determine SATA sequence

ONBOARD DEVICE:

The options for these items are found in its sub menu. By pressing the <ENTER> key, you are prompt to enter the sub menu of the detailed options as shown below:
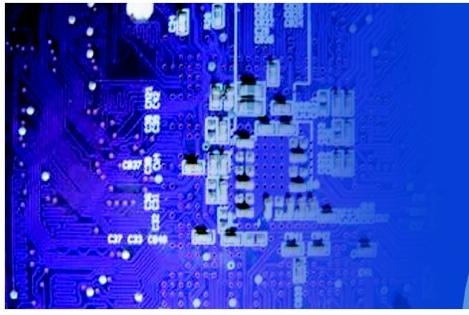
Phoenix - Award CMOS Setup Utility Onboard Device

```
USB Controller                [Enabled]          Item Help
USB 2.0 Controller            [Enabled]
USB Keyboard Support          [Enabled]
                                                Menu Level  ►


↑↓→←:Move  Enter: Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help
   F5: Previous Values      F6:Fail-Safe Defaults    F7:Optimized Defaults
```

Descriptions on each item above are as follows:

1. USB Controller

This should be enabled if your system has a USB installed on the system board and you want to use it. Even when so equipped, if you add a higher performance controller, you will need to disable this feature.

2. USB 2.0 Controller

Enable the USB 2.0 controller

3. USB Keyboard Support

Select Enabled if your system contains a Universal Serial Bus (USB) controller and you have a USB keyboard.

SUPER IO DEVICE:

The options for these items are found in its sub menu. By pressing the <ENTER> key, you are prompt to enter the sub menu of the detailed options as shown below:

```
Onboard Serial Port 1         [3F8/IRQ4]         Item Help
Onboard Serial Port 2         [2F8/IRQ3]
UART Mode Select              [Normal]
TxD, RxD Polarity Active      [Lo, Hi]
                                                Menu Level  ►


↑↓→←:Move  Enter: Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help
   F5: Previous Values      F6:Fail-Safe Defaults    F7:Optimized Defaults
```
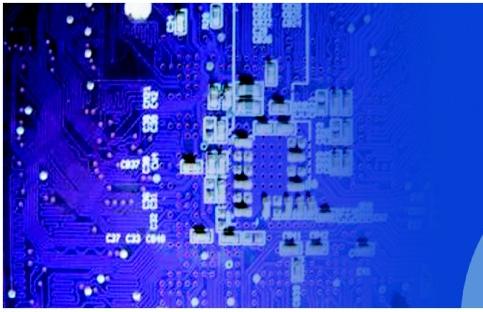
Descriptions on each item above are as follows:

1. Onboard Serial Port 1/2

Select an address and corresponding interrupt for the first and second serial ports.

2. UART Mode Select

This item allows you to select UART mode.

3. TxD, RxD Polarity Active

This item allows you to determine the active of RxD, TxD

WATCHDOG SUPPORT: To select watch-dog times.

4-7 Power Management Setup

Choose "POWER MANAGEMENT SETUP" option on the main menu, a display will be shown on screen as below :

Phoenix - AwardBIOS CMOS Setup Utility Power Management Setup

```
ACPI Function             [Enabled]          Item Help
Video Off In Suspend      [Yes]
Soft-Off by PWR-BTTN      [Instant-Off]
PWRON After PWR-Fail      [Off]


                                             Menu Level    ►




↑↓→←: Move  Enter: Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help
   F5: Previous Values    F6: Fail-Safe Defaults    F7:Optimized Defaults
```

Power Management Setup Screen

The "Power Management Setup" allows the user to configure the system to the most effectively save energy while operating in a manner consistent with your own style of computer use.

ACPI FUNCTION:

Users are allowed to enable or disable the Advanced Configuration and Power Management (ACPI).
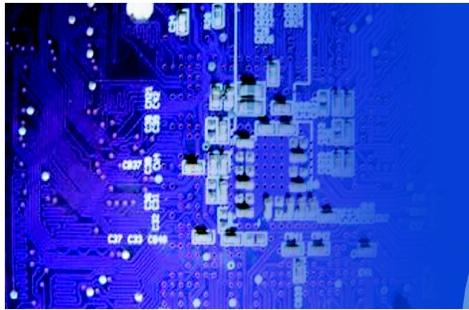
 SOFT-OFF BY PWR-BTTN:

Pressing the power button for more than 4 seconds forces the system to enter the Soft-Off state when the system has "hung". The choices are Delay 4 Sec and Instant-Off.

PWRON AFTER PWR-FAIL:

This item allows you to select if you want to power on the system after power failure. The choice: Off and On

4-8 PNP/PCI Configuration

Choose "PNP/PCI CONFIGURATION" from the main menu, a display will be shown on screen as below:

Phoenix - AwardBIOS CMOS Setup Utility PnP/PCI Configurations

```
   Resources Controlled By      [Auto (ESCD)]      Item Help
 x IRQ Resources                Press Enter
   Maximum Payload Size         [4096]             Menu Level  ▶


↑↓→←: Move  Enter: Select  +/-/PU/PD:Value  F10:Save   ESC:Exit   F1:General Help
   F5: Previous Values     F6: Fail-Safe Defaults   F7:Optimized Defaults
```

PNP/PCI Configuration Setup Screen

The PNP/PCI Configuration Setup describes how to configure PCI bus system. PCI, also known as Personal Computer Interconnect, is a system, which allows I/O devices to operate at speeds nearing the speed of the CPU itself uses when communicating with its own special components.

This section covers technical items, which is strongly recommended for experienced users only.

RESOURCE CONTROLLED BY:

The Award Plug and Play Bios can automatically configure all of the booth and Plug and Play-compatible devices. However, this capability means absolutely nothing unless you are using a Plug and Play operating system such as Windows 95. By choosing "manual", you are allowed to configure the IRQ Resources and DMA Resources.

IRQ RESOURCES:

The options for these items are found in its sub menu. By pressing the <ENTER> key, you are prompt to enter the sub menu of the detailed options as shown on next page:

Phoenix - Award CMOS Setup Utility IRQ Resources

```
IRQ-3 assigned to        [PCI Device]         Item Help
IRQ-4 assigned to        [PCI Device]
IRQ-5 assigned to        [PCI Device]
IRQ-7 assigned to        [PCI Device]      Menu Level    ►
IRQ-9 assigned to        [PCI Device]
IRQ-10 assigned to       [PCI Device]      Legacy ISA for devices
IRQ-11 assigned to       [PCI Device]      compliant with the original PC
IRQ-12 assigned to       [PCI Device]      AT bus specification, PCI/ISA
IRQ-14 assigned to       [PCI Device]      PnP for devices compliant
IRQ-15 assigned to       [PCI Device]      with the Plug and Play
                                           standard whether designed for
                                           PCI or ISA bus architecture

↑↓→←:Move  Enter: Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help
   F5: Previous Values    F6:Fail-Safe Defaults   F7:Optimized Defaults
```

Descriptions on each item above are as follows:

1. IRQ-n Assigned to:

You may assign each system interrupt a type, depending on the type of device using the interrupt.

MAXIMUM PAYLOAD SIZE:

To select the maximum payload size of PCI Express devices.

4-9 PC Health Status
Choose "PC HEALTH STATUS" from the main menu, a display will be shown on screen as below:

Phoenix - AwardBIOS CMOS Setup Utility PC Health Status

```
Shutdown Temperature       [Disabled]
Current CPU Temerature     40 C           Item Help
Vcore                      1.36V
 5V                        5.01V          Menu Level    ►
 12V                       12.35V
Fan1 Speed                 0 RPM
Fan2 Speed                 0 RPM

↑↓→←: Move  Enter: Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help
   F5: Previous Values    F6: Fail-Safe Defaults   F7:Optimized Defaults
```
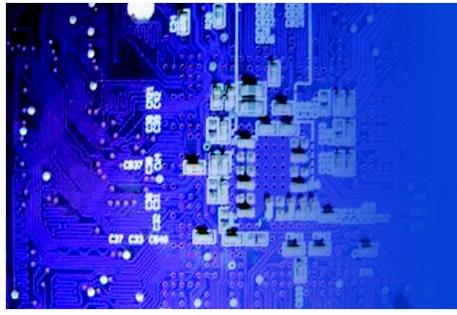
PC Health Status Setup Screen

The PC Health Status Setup allows you to select whether to choose between monitoring or to ignore the hardware monitoring function of your system.

-SHUTDOWN TEMPERATURE:

This item allows you to set up the CPU shutdown Temperature.

-CURRENT CPU TEMPERATURE:

This item shows you the current CPU temperature.

-VCORE:

This item shows you the current system voltage.

-5V / 12V :

Show you the voltage of5V/12V.

-FAN1/FAN2 SPEED:

This item shows you the current CPU/ SYSTEM FAN speed.

4-10 Load Fail-safe Defaul TS

By pressing the <ENTER> key on this item, you get a confirmation dialog box with a message similar to the following:

Load Fail-Safe Defaults (Y/N) ? N

To use the BIOS default values, change the prompt to "Y" and press the

<Enter > key. CMOS is loaded automatically when you power up the system.
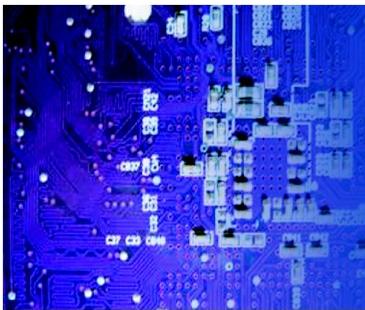
4-11   Load Optimized Defaults

When you press <Enter> on this category, you get a confirmation dialog box with a message similar to the following:

```
Load Optimized Defaults ( Y/N ) ? N
```

Pressing "Y" loads the default values that are factory setting for optimal performance system operations.

4-12   Password Setting

User is allowed to set either supervisor or user password, or both of them. The difference is that the supervisor password can enter and change the options of the setup menus while the user password can enter only but do not have the authority to change the options of the setup menus.

TO SET A PASSWORD

When you select this function, the following message will appear at the center of the screen to assist you in creating a password.

```
Enter Password:
```

Type the password up to eight characters in length, and press < Enter >.

The password typed now will clear any previously entered password from CMOS memory. You will be asked to confirm the password. Type the password again and press the < Enter > key. You may also press < Esc > to abort the selection and not enter a password.

  User should bear in mind that when a password is set, you will be asked to enter the password everything you enter CMOS setup Menu.

TO DISABLE THE PASSWORD

To disable the password, select this function (do not enter any key when you are prompt to enter a password), and press the <Enter> key and a message will appear at the center of the screen:

```
PASSWORD DISABLED!!!
Press any key to continue...
```
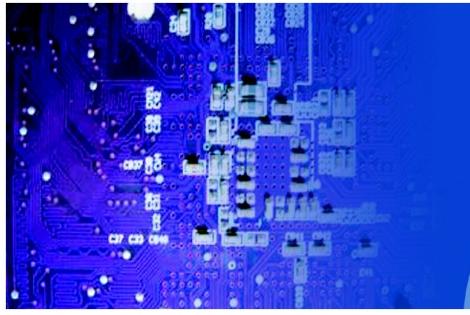
Press the < Enter > key again and the password will be disabled. Once the password is disabled, you can enter Setup freely.

4-13 Save & Exit Setup

After you have completed adjusting all the settings as required, you must remember to save these setting into the CMOS RAM. To save the settings, select "SAVE & EXIT SETUP" and press <Enter>, a display will be shown as follows:

Phoenix - AwardBIOS CMOS Setup Utility

► Standard CMOS Features	Load Fail-Safe Defaults
► Advanced BIOS Features	Load Optimized Defaults
► Advanced Chipset Features	Set Supervisor Password
► Integrated Periphe...	word
► Power Managemen...	Save to CMOS and EXIT Y/N)? Y	setup
► PnP/PCI Configura...	Saving
► PC Health Status	
Esc : Quit	↑↓→← : Select Item
F10 : Save & Exit Setup	
Save Data to CMOS	

When you confirm that you wish to save the settings, your system will be automatically restarted and the changes you have made will be implemented. You may always call up the setup program at any time to adjust any of the individual items by pressing the <Del> key during boot up.
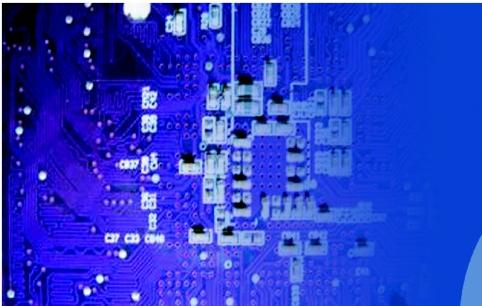
4-14 Exit Without Saving

If you wish to cancel any changes you have made, you may select the "EXIT WITHOUT SAVING" and the original setting stored in the CMOS will be retained. The screen will be shown as below:

Phoenix - AwardBIOS CMOS Setup Utility

```
► Standard CMOS Features          Load Fail-Safe Defaults

► Advanced BIOS Features          Load Optimized Defaults

► Advanced Chipset Features       Set Supervisor Password

► Integrated Periphe                                   word
                      Quit Without Saving (Y/N)? N
► Power Managemen                                      etup

► PnP/PCI Configura                                    Saving

► PC Health Status

Esc : Quit                        ↑↓→← : Select Item
F10 : Save & Exit Setup

                 Abandon all Datas
```

APPENDIX A: EXPANSION BUS

COMPACT FLASH CARD CONNECTOR PIN ASSIGNMENT

The pin assignments of Compact Flash Card connector are stated below.

PIN	ASSIGNMENT	PIN	Assignment
1	GND	26	-CD1
2	D03	27	D11
3	D04	28	D12
4	D05	29	D13
5	D06	30	D14
6	D07	31	D15
7	-CS0	32	-CS1
8	A10	33	-VS1
9	-ATASEL	34	-IORD
10	A09	35	-IOWR
11	A08	36	-WE
12	A07	37	IRQ14
13	VCC	38	VCC
14	A06	39	-CSEL
15	A05	40	-VS2
16	A04	41	-RESET
17	A03	42	IORDY
18	A02	43	-INPACK
19	A01	44	-REG3
20	A00	45	-DASP
21	D00	46	-PDIAG
22	D01	47	D08
23	D02	48	D09
24	-IOCS16	49	D10
25	-CD2	50	GND
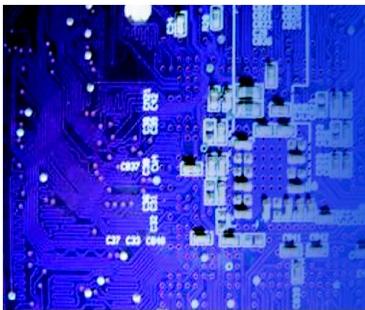
APPENDIX B: TECHNICAL SUMMARY

Block Diagram
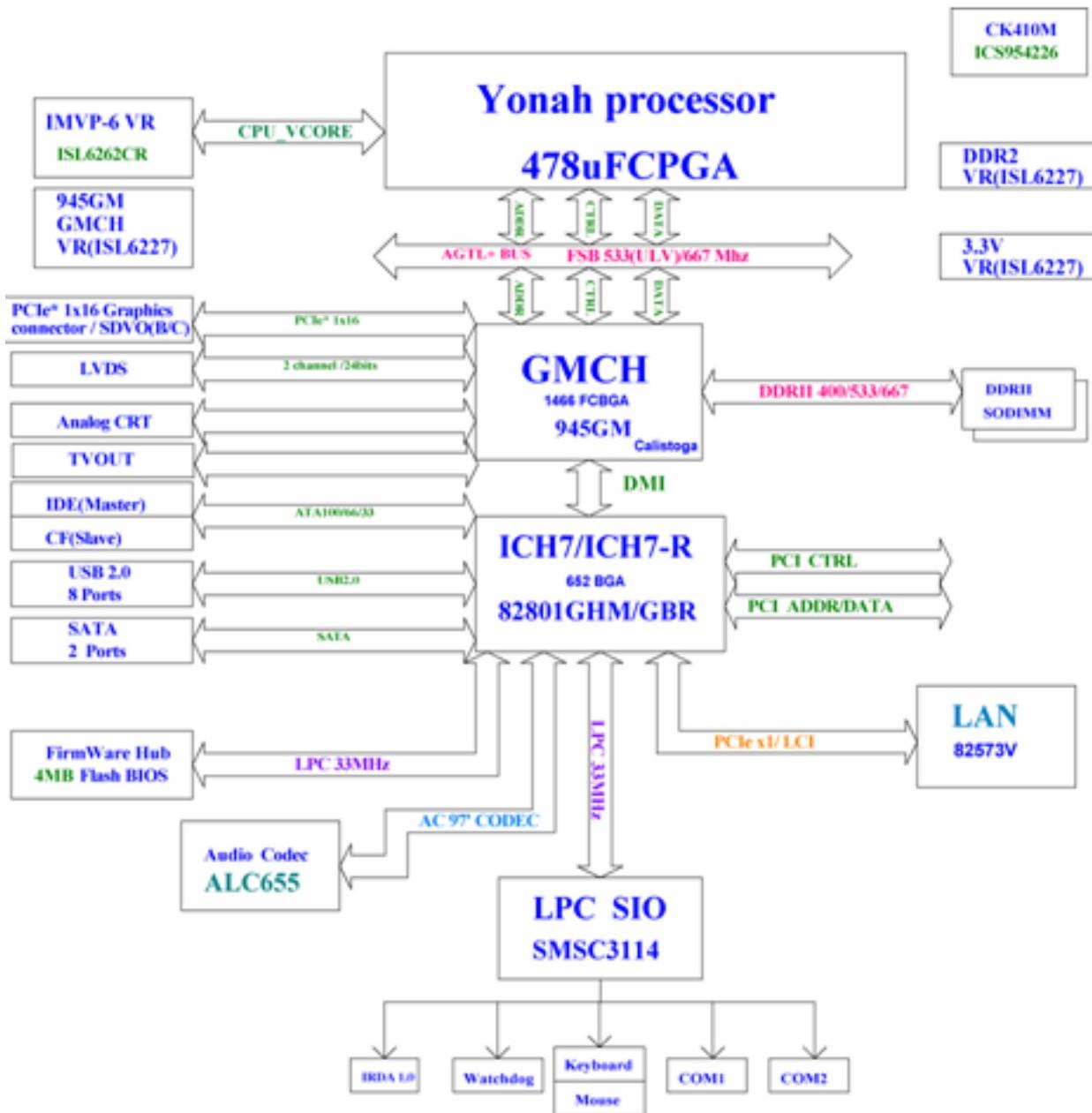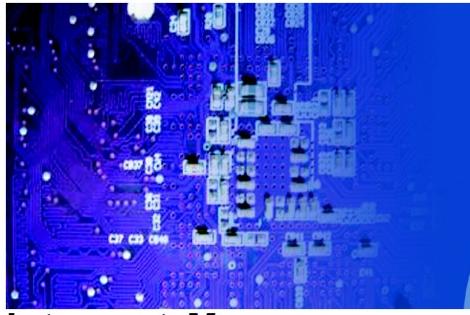
Interrupt Map

IRQ	ASSIGNMENT
0	System TIMER
1	Keyboard
2	Cascade
3	Serial port 2
4	Serial port 1
5	Available
6	Floppy
7	Parallel port 1
8	RTC clock
9	Available
10	Available
11	Available
12	PS/2 Mouse
13	Math coprocessor
14	IDE1
15	IDE2
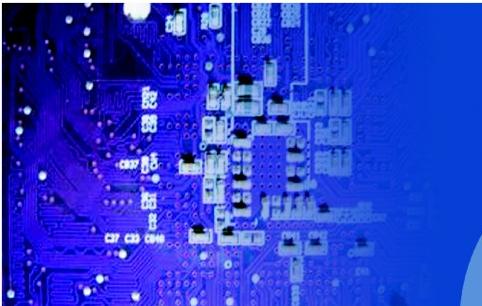
RTC & CMOS RAM MAP

CODE	ASSIGNMENT
00	Seconds
01	Second alarm
02	Minutes
03	Minutes alarm
04	Hours
05	Hours alarm
06	Day of week
07	Day of month
08	Month
09	Year
0A	Status register A
0B	Status register B
0C	Status register C
0D	Status register D
0E	Diagnostic status byte
0F	Shutdown byte
10	Floppy Disk drive type byte
11	Reserve
12	Hard Disk type byte
13	Reserve
14	Equipment byte
15	Base memory low byte
16	Base memory high byte
17	Extension memory low byte
18	Extension memory high byte
30	Reserved for extension memory low byte
31	Reserved for extension memory high byte
32	Date Century byte
33	Information Flag
34-3F	Reserve
40-7f	Reserved for Chipset Setting Data
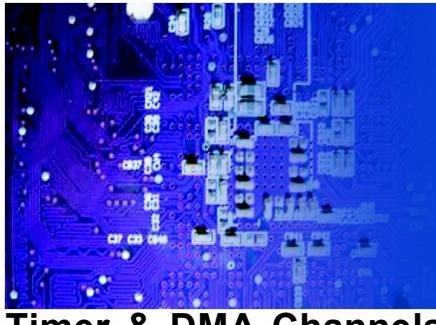
Timer & DMA Channels Map

Timer Channel Map :

Timer Channel	Assignment
0	System timer interrupt
1	DRAM Refresh request
2	Speaker tone generator

DMA Channel Map :

DMA Channel	Assignment
0	Available
1	Available
2	Floppy
3	Available
4	Cascade
5	Available
6	Available
7	Available

I/O Memory Map

Memory Map :

MEMORY MAP	ASSIGNMENT
0000000-009FFFF	System memory used by DOS and application
00A0000-00BFFFF	Display buffer memory for VGA/ EGA / CGA / MONOCHROME adapter
00C0000-00CFFFF	Reserved for onboard or external VGA ROM.
00D0000-00DFFFF	Reserved for PCI device ROM
00E0000-00FFFFF	System BIOS ROM
0100000-FFFFFFF	System extension memory
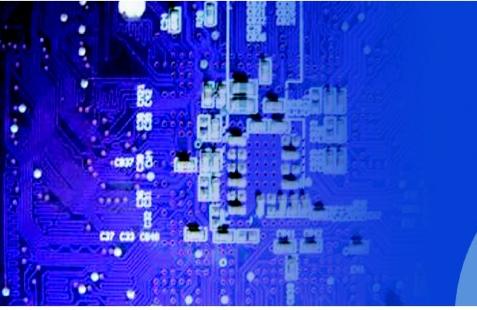
I/O Map :

I/O MAP	ASSIGNMENT
000-01F	DMA controller (Master)
020-021	Interrupt controller (Master)
022-023	Chipset controller registers I/O ports.
040-05F	Timer control registers.
060-06F	Keyboard interface controller (8042)
070-07F	RTC ports & CMOS I/O ports
080-09F	DMA register
0A0-0BF	Interrupt controller (Slave)
0C0-0DF	DMA controller (Slave)
0F0-0FF	Math coprocessor
1F0-1F8	Hard Disk controller
278-27F	Parallel port-2
2B0-2DF	Graphics adapter controller
2F8-2FF	Serial port-2
360-36F	Network ports
378-37F	Parallel port-1
3B0-3BF	Monochrome & Printer adapter
3C0-3CF	EGA adapter
3D0-3DF	CGA adapter
3F0-3F7	Floppy disk controller
3F8-3FF	Serial port-1